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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

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A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

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A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—ANALYSIS OF THINKING. (I.)

By W. E. Johnson.

It is usual to introduce the study of any branch of Philosophy by defining its scope; but the importance attached to demarcating one subject from another has been much exaggerated. On the one hand, it has often involved the false implication that certain fundamental statements that are put forward in one department of knowledge must in some way be modified when transferred to another. This is illustrated by the way in which the standpoints of Science and Philosophy have been broadly contrasted; and, again, in the distinctions drawn within Philosophy between Psychology and Metaphysics, Psychology and Ethics, Psychology and Logic, Logic and Metaphysics, etc. On the other hand, it has frequently led to a shirking of problems on the borderland between two allied studies. In both these connexions, the customary treatment of the relation and distinction between a logical and psychological study of thought must be examined. Taking thought to be a common subject for logical and psychological study, it must be treated in both as involving a mental attitude in which the thinker is in relation to what in the most general sense is called an object. Whereas it is frequently implied, almost without qualification, that Psychology and Logic give entirely distinct treatments of this common topic, the view here put forward is that the preliminary treatment of thinking should be precisely the same, both as regards substance and detail, in each of the two studies. What is common to the two studies consists in an *analysis* of the process of thinking; and this analysis has the same value and necessity whether we diverge later along the path of logic or along that of psychology. As regards the divergence, writers are in the main agreed: it is agreed that what distinguishes Logic from Psychology is its consideration of the *validity* of the thinking process, while Psychology treats the thinking process in its *causal* connexions with other aspects of the thinker's experience. While this distinction is universally recognised, the absolute agreement between the two studies where they overlap has been virtually ignored; and, in consequence, the fundamental analysis of thought is often shirked, both by the logician, who concerns himself with *validity*, and by the psychologist, who concerns himself with *causal connexion*. We must insist upon the necessity of an identical treatment and discussion of the thinking process in the two studies. Thus the relation between Logic and Psychology, so far as thought is concerned, is that they occupy common ground in the preliminary analysis of thought; and their paths of divergence can only be satisfactorily pursued when there is precise agreement of treatment in this preliminary account.

Before proceeding with this analysis, we may briefly contrast our position with one or two other accounts of the distinction between Logic and Psychology. It is sometimes said that Logic is concerned with thought as a *product*, and Psychology with thought as a *process*. Or again Logic is said to be concerned with the *object* of thought, and Psychology with the *relation* of the thinker to that object. Neither of these distinctions appears to me tenable. Psychology is not solely concerned with process to the exclusion of product; and, so far as any clear distinction between product and process can be consistently held, neither study can treat the one except in relation to the other. Again, it is a pure myth to suppose that we can treat an *object* of thought apart from its connexion with the thinker; and it is still more impossible to treat of an act of thinking without reference to the object of thought. We proceed, therefore, to give some preliminary analysis of thinking.

As a basis for further development it is permissible to assume that thinking involves a thinker, an object, and a connexion between them; and further, that the act of thinking about an object is an *occurrence* in the experience of the thinker. One such occurrence may differ from another in two fundamental respects: first, in regard to the object to which the thought refers, and, secondly, in the way of thinking about that object.

We reserve for the present the difficult problem of what is meant by an object and consequently of what is involved in identity of object, and, assuming such identity, proceed to examine the different respects in which the thinking attitude may vary. In thinking about a table we may be thinking of it as red or thinking of it as square; and this, assuming *identity* in the object of thought, illustrates *difference* in our *characterising* of this object. As our thinking about an object develops, we shall normally introduce a greater and greater number of characterisations, with more and more precise determinations of them. Thus, as our interest or purpose varies, we think at one time of an object as having one quality or relation, and at another as having a quality or relation of a different kind; or again we may be developing our thoughts about an object in a continuous process. The special interest we have at any moment will determine the different characterisations that we predicate of one and the same object; and these different characterisations will constitute our thinking relation at the time to that object.

The above account is fundamentally opposed to that analysis according to which the processes that we have distinguished involve—not differing cognitive relations of the thinker to the same object—but different objects in the same invariable relation of cognition to the thinker. A view which approximates to mine has sometimes been expressed by making an antithesis between the content of thought and the object of reference. This language is legitimate if it is understood that variations of content in thoughts that refer to the same object are to be regarded as variations in the *cognitive relation* to that object. Otherwise the content of thought is exhibited as an object to which is falsely attributed the same kind of particularity as attaches to the object of reference with which it is contrasted: the former being conceived as the mental or inner object in contrast to the latter which is conceived as the real or outer object. This Duplicate Theory of thought, as it may be called, is to be once for all rejected. Its adoption gives rise to the question, what sort of relation does the inner object bear to the outer? The first naïve answer to this old philosophical problem is to the effect that the inner object is a *copy* of the outer. Others have spoken in more or less vague terms of a resemblance, not amounting to exact agreement, and others again of a correspondence which precludes even resemblance but is otherwise undefined; in either case, however, the problem seems to have arisen from a false manner of duplicating the object. There seems to have been a confusion between the relation of percept to image with the relation of reference to content. The content is supposed to *represent* the object of reference in the same way as the image represents the percept. Now the image may truly be said to represent the percept in the sense that the image is a sort of copy of the percept. In fact there are quite definable aspects in which an image literally agrees with an actual or possible percept. This literal agreement in certain aspects between an image and a possible percept goes along with absolute difference in certain other assignable aspects; and it is a problem for psychology to deal further with the subtle question of the agreement and difference between image and percept in general. This problem does not concern us here. What we have to insist upon is that the relation of content to object of reference is totally different from that of image to percept. For the content is a characterisation of the object of reference, and the image is certainly not a characterisation of the percept. We must here point out the distinction between the words *idea* and *image*, terms which have wrought confusion throughout the history of philosophy, traces of which can be discerned even in Plato. When Hume spoke of ideas as copies of impressions, his doctrine was logically unassailable (however much it might require psychological modification), if by 'idea' is understood 'image'. But, when Locke spoke of the idea *of* an object, he did not generally mean a copy of the object but a characterising of the object; and in this usage 'idea' may be identified with what has been otherwise termed 'content'. Thus the relation of idea to object, or of content to reference, is not the relation of resemblance which could apply only to terms of the same category, but the relation of characterisation which applies to terms of opposed categories. Locke's philosophy, however, is not free from the charge of duplicating the object, for he speaks of the idea as that with which we are directly cognisant (thus conceiving of it as the inner object), and raises the question whether or not there is a real object answering to the idea. For him the idea is "the object of the understanding when a man thinks". Philosophers like Locke, who use this language, are misled by the form of the word 'idea,' which, though grammatically substantival, has, according to the view which rejects the duplicate theory, a purely relational significance. Thus in the phrase "I have an idea of an object," the words "have an idea of" taken together represent the relation of the thinker to the object; the phrase as a whole means "I am thinking about the object," and the word 'idea' which occurs in place of the relational phrase 'thinking about' indicates the more or less determinate character which I am assigning to the object in my thought. For a fuller consideration of this question we must turn to another aspect of the thinking process.

There are various ways of defining thought as a special mode of cognition. In the first place thinking is regarded as involving activity, and is thus contrasted with a purely receptive form of cognition to which the term mere awareness may be applied. It is doubtful whether this purely receptive attitude ought to be included under cognition; strictly speaking, mere awareness seems to be a purely momentary phase, inseparable from the impulse to initiate the activity of thought. Now activity is not a momentary phase, but a progressive process; and cognitive activity is a process in which the character of the object given in mere awareness is being progressively determined. In the second place, it is usual to restrict the term thinking to activities belonging to a higher level of intelligence than such processes as sense-perception and imaginative reproduction; but a more comprehensive view would demand that the term should be extended to include these lower cognitive processes on the ground that they involve activity, which is the more important principle of distinction. I shall accordingly use the term thinking in this wider sense to include the activity that is manifested in cognitively determining the character of what is given in sense-impression or sense-imagery, the initial phase of which is known as mere awareness. Thus, of the two principles of distinction so far considered, I propose to reject that which restricts thinking to the higher levels of intelligence, and to retain only the restriction which limits the term to cognitive activity to the exclusion of merely receptive cognition.

In proceeding to a further analysis of thought, we must refer to the phrase 'thinking about' as it occurs in the statement 'I am thinking about a certain object'. Here the object about which I am thinking will be called the object of my attention. Now the process of thinking about an object involves, as we have seen, the cognitive determination of the character of that object; but this process cannot be taken to start from a point at which the cognition of the character is absolutely undetermined; it proceeds rather from a relatively undetermined to a relatively determined cognition of character. We may say that the character under which I cognitively determine the object is a *component* of my thought. In this way we may distinguish, in reference to the same thinking act, between the object of my attention and a component of my thought. Now a component of my thought—which is a character which I attach to the object of my attention—stands to me in a different relation from this latter. I propose to use the word *apprehension* to denote this relation. Thus, while the object of my attention means the object about which I am thinking, the object of my apprehension will mean the character under which I determine the object of my attention. It must be observed that the act of attention *includes* the act of apprehension, so that the object attended to is a complex which includes the object of apprehension. The two objects (so-called) are not two distinct objects since the one comprehends the other. Thus in "I am [(apprehending) the quality hard as characterising] a certain sensation" the outer bracket represents my relation to 'the sensation,' the inner bracket, my relation to 'hard,' and the mode of bracketing explains why we may speak of 'hard' as an object (*viz.*, of apprehension) and also of 'the sensation' as an object (*viz.*, of attention) and that the act of attention includes the act of apprehension. It is thus permissible to use the word 'object' in two applications in our analysis of thought; in doing so we are not committing the fallacy of the duplicate theory, because we do not interpret the statement "I am thinking about a certain object" as if it meant "I am thinking about the character under which I determine the object about which I am thinking"; for the character is not that about which I am thinking, but a component in my thinking about the object. We have previously maintained that our cognitive relation to any object, say *this sensation*, must be said to vary according as we are thinking about it as characterised by *hard* or as characterised by *cold.* We must now add that our cognitive relation to any quality, say *hard* must be said to vary according as we are apprehending it as characterising *this sensation* or as characterising *that sensation.* The former relation is represented thus: "I am [(apprehending) the quality *hard* as characterising] *this sensation*"; the latter, thus: "I am [(thinking about) *this sensation* as characterised by] the quality *hard*". These formulæ bring out the two *different* kinds of relation in which the thinker may stand to the two *different* kinds of objective element; they may be now restated so as to bring out the correlation of the subjective as such with the objective as such: thus—"I am thinking of (hard as characterising this sensation)"; or "I am thinking of (this sensation as characterised by hard)". What is here enclosed in brackets represents the complete object of my thought, whereas the component (or object of apprehension) and the object of reference, are but incomplete representatives of the object of thought. Within the object of thought we have distinguished the object of reference, here represented by the phrase 'this sensation,' from the object of apprehension, here exemplified by the character 'hard'.

We have now to consider the nature of our attitude of thought towards an object of reference that is presented prior to any constructive process, and which may be called ultimate. The ultimate object of reference may be said to be *given;* and taking the correlative of giving to be receiving, we may describe our attitude towards the given as receptive. As we have already pointed out, the *purely* receptive attitude is not (properly speaking) cognitive; being a merely momentary phase, upon which the process of cognitive activity may follow. It must be maintained that the relation of receptivity towards any object does not *preclude* simultaneous activity upon that object, nor does it necessarily or invariably *involve* simultaneous activity upon it. In thinking about what is ultimately given—which constitutes the activity of attention—we apprehend some quality as characterising the given; thus, in the most elementary thought process, we are in an attitude of reception towards what is given, and of apprehension towards some quality that may characterise it. We have connected the term *given*, so far, with the notion of the receptive attitude; but the implications of the term may be more positively indicated by reference to the notion of *direct* as contrasted with inferential characterisation. Thus whatever is directly characterised is given; while our characterisation of what is not given is necessarily inferential —as for instance when we characterise another person's experience, or an event in the future or in a remote place. Since we are not always actually characterising what is given, the given must be identified—not with what is being directly characterised—but with what could be characterised without any recourse to inference: the given is thus equivalent to what *can be* directly characterised. Now it will be found that any object that can be said to be given is an occurrence. The assertion, in any particular case, that it is the *given* that is being characterised, would be commonly regarded as indisputable *only* when the occurrence of the act of characterising is contemporaneous with the occurrence characterised. But in my view this limitation is unnecessary, and contemporaneous need not be interpreted with literal and mathematical precision. For, in what is known as primary memory, the thinker must be held to be in the same direct relation to a past occurrence as to a present occurrence; and therefore, in characterising an occurrence presented in primary memory, he must be said to be characterising the given. Extending the term primary memory, it would seem to be demonstrable—not only that inferential memory *in general* depends upon primary memory—but that any specific inferential memory depends upon a specific primary memory. When we infer that a remembered *s* was *p*, on the ground that any *m* would be *p*, this inference requires the assertion that the remembered *s* was *m;* and this assertion must finally rest upon primary memory. I might have used the term *direct* instead of *primary* memory, but, in introspecting, I cannot distinguish between my direct relation to an approximately immediate, and my relation to a relatively remote, past occurrence.

That the characterised occurrence should be simultaneous with my act of characterising it is obviously not a sufficient criterion for identifying it with the given. On this point two connected questions arise: (1) To what class belongs an occurrence that can be said to be given? (2) In what relation to me must an occurrence stand in order that it may be said to be given to me? My answer to these questions is: that in order that an occurrence may be given, it must be an experience; and in order that it may be given to me, it must be mine. I must explain my use of the term experience. This term is familiarly used as a transitive verb, as in the phrases 'I am experiencing an emotion of anger,' 'I am experiencing a painful sensation,' 'I am experiencing an auditory sensation'. But I hold that this language suggests a false analysis, inasmuch as it makes experiencing into a relation of the experient to the emotion, the pain, or the sensation; whereas, in fact, these expressions merely illustrate what the grammarians call the *cognate accusative: e.g.*, "I am experiencing an emotional experience" is analogous to "I dreamed a dream," "He slept the sleep of the righteous". Experience, therefore, is a generic term, of which emotion, sensation, desire, are species; and hence the above phrases are more correctly expressed without introducing the relational use of the term experience, thus: 'A certain experience of mine is an emotion of anger,' 'A certain experience of mine is a painful sensation,' etc. We ought never to speak of an *object* of experience; experiences become objects, *i.e.*, objects of thought, when any thinker—the experient or another—characterises them by such adjectives as painful, loud, hard. Now when the experient characterises his sensation as painful, his attitude towards it would appear to be different from that in which he characterises it as hard. This apparent difference of attitude is accounted for when we consider that the variable characteristic known as hedonic tone (including pleasantness, unpleasantness, and hedonic neutrality) attaches to all experiences of every kind whatever; and is moreover causally connected according to universally understood laws with such other phases of experience as desire and directed action. In consequence, hedonic tone (etc.) has come to be regarded as a *subjective* mode of characterising experiences, direct knowledge of which is obtained by *introspection;* while other characterisations are regarded as *objective*, and the direct knowledge of these is supposed to be obtained by a method other than introspection. The terminology which distinguishes between subjective and objective *characters* of an experience seems to me to be convenient; but it would be wholly impermissible to divide *experiences* into the two classes—subjective and objective. Assuming that it is universally agreed that at any time there are certain experiences of mine which I can directly characterise, it will be agreed that these experiences are given to me *at that time*. Now what is given to me at any time may be either (1) a present or (2) a past experience. First, as regards any *present* experience: although this can be directly characterised in regard to *some* of its aspects, yet there are other aspects, in regard to which it cannot be directly characterised by the experient. Again, as regards a *past* experience: the experient can directly characterise this only in regard to those aspects under which he had characterised it when it occurred, and which are associated with some apprehended aspect of a present experience. The term 'unconscious' has been used with deplorable vagueness to denote 'what is not cognised'; it has been predicated of an experience, whereas if used at all, it should be predicated of *aspects* or *characters* of an experience; and even then it is essential to note the further distinction between 'not directly-*cognised*' and 'not directly-*cognisable*,' terms which it would be preferable to substitute for 'unconscious'. The purpose of this analysis is to point out that in connecting the notion of the given with the notion of direct characterisation, it is necessary to take into account the psychological limitations of the range of possible direct characterisation of even what is given. We must finally point out that what is given is not a bare object, but a union of object and character. The term 'given' is in consequence applied to the character as well as to the object; and in this application—which involves a sort of equivocation—*given* which in its first application was the correlative of directly characterised becomes the correlative of directly apprehended. Now here the notion of 'given' no longer carries with it the implication of mere receptivity, inasmuch as the cognition of character is a distinct psychical act. Yet in contrast with the kind of activity involved in inferential or constructive processes, the activity of direct apprehension (or cognition) of the character of what is given, is adequately described as 'receptivity'.

In adopting the position that experiences alone can be said to be given and directly characterised, I am opposed to those philosophers who maintain that we are in direct cognitive relation with realities other than experiences—whether these are regarded as physical, or of a nature which is neither physical nor psychical. While maintaining, on the one hand, the ontological position that there *are* realities other than experiences—*e.g.*, physical realities and experients—yet I hold, at the same time, the epistemological view that such realities are known only by processes of construction. The special treatment of such categories as cause and substance, which I hold to be involved in the construction of physical realities, etc., cannot be approached until those forms of logical construction which pertain to a *general* analysis of thinking have been considered. For the experient cannot construct such realities without implicitly employing the more general forms of logical construction; and these alone will be treated in this article. To complete the account of the position which I adopt (in agreement with what I believe to be the assumptions of philosophers in general) I must add the two further postulates relating to the given: the ontological postulate, that what is given is *real;* and the epistemological postulate, that what is directly known of the given is *true.*[1]

The discussion of logical forms of construction may be begun by assuming that the application of the term proposition is sufficiently well understood, and that I may postpone for the present what I shall have specially to say about its connexion with assertion. We have been considering thought in its aspect of characterising an object; we shall now apply the terms substantive and adjective to that which is characterised and that which characterises, respectively. In borrowing these and other terms from grammar, I apply them in a sense which emphasises the distinction between a word and that which is denoted by a word. Thus I define a substantive-word as that which denotes a substantive; a preposition-word as that which denotes a preposition, etc. Where more than one word is involved, 'phrase' takes the place of 'word': thus a proposition-phrase (otherwise called a sentence) is that which denotes a proposition. It then remains, as belonging to the special province of logic as opposed to grammar, to define the terms substantive, adjective, etc., themselves, as distinct from the words or phrases which denote them; and this logical treatment will lead to certain modifications of grammatical classification. There is some difficulty in defining the terms substantive and adjective, because the freedom of grammatical structure enables us in the first place to express in *substantival* form a term belonging to any other logical category; and consequently, in the second place, to express in *adjectival* form anything that is predicable of such a quasi-substantive. Genuine substantives and genuine adjectives, besides being correlated structurally as characterised and characterising, are to be intrinsically distinguished; whereas quasi-substantives and quasi-adjectives are correlated *merely* structurally.

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[1] *Direct* characterisation of what is given in sense-impression or other modes of experience is often a difficult achievement. When we characterise the visual impression of grass in the dark by the adjective *green*, our judgment is inferential and therefore liable to error; the same holds in characterising our motives and so on.

The proposition will be at once understood to involve the two kinds of component, substantive and adjective—the adjective being essentially an object of apprehension, and the substantive being the object of reference. The simplest proposition which can be expressed in words or symbols will thus assume the form—s is p, where the symbols s and p stand illustratively for proper names denoting respectively a substantive and an adjective. Though this is the simplest form of proposition that can be linguistically expressed, we must take note of a more primitive attitude of assertion which precedes the use of proper names; a few examples will illustrate this kind of assertion. Let us suppose that the child hears thunder, and that he can mentally retain similar or different sounds that he has heard before. This presupposes that he has *separated* each auditory experience from other experiences occurring at the same or other times. The act of separation *or* separative attention is thus the precondition of all further cognitive activity. Separative attention does not imply thinking about one object *as being distinct from another*, but rather thinking about one object without thinking about others. Separative attention to one object, followed by separative attention to another, may next lead to a combined attention to the one and the other, and this will involve an apprehension of the relation of otherness. In primitive acts of thought separative attention to each of a plurality of objects is only possible when the objects are presented at different times or places.[1] A separative attention to each of several objects and a combinative attention to them as a unity must have occurred before it is possible to apprehend in any determinate way the temporal or spatial modes of connexion amongst them. Hence one direction of cognitive activity is that in which these modes of temporal or spatial connexion are progressively apprehended in an increasingly determinate form. Such *connective* cognition—as we may call it—must be contrasted with *discriminative* cognition, which concerns the *character* of the separated object, in the narrower and more usual sense of the term character. It is sometimes convenient to speak of the characterising process in contrast to the connecting process, although characterisation—in a wider sense—may be said to include both. What is important to emphasise, however, is that before we can, in an act of comparison, identify or discriminate the *character* of one object in relation to the *character* of another, we must have *separated* the one object from the other in a previous act of separative and combinative attention. In briefer language we must have apprehended the relation of otherness between two objects before we can apprehend the relation of identity or of difference *between their characters*. Mr. Bradley has said that we cannot have difference without distinction; here difference means otherness, and distinction means discrimination. I should exactly reverse Mr. Bradley's doctrine, and maintain that we cannot have distinction without difference: or—to put it more precisely and more widely—we cannot have either discrimination *or identification* of character without presupposing the separative act by which otherness of object is apprehended. Separation being thus presupposed, the child may proceed to compare the several sounds to which he has separately attended. If he names the character of one sound as p, this will mean that he has identified the *character* of this auditory experience with the *character* of some other auditory experience which he has separated from the former. And again, if he names the character of a third sound by q, this will mean that he has discriminated the character of this third auditory experience from that of the first or second. In this way the use of adjective-names is a record of acts of identification and discrimination of *character*. In the same way the use of substantive-names (of the most elementary nature) is a record of acts of separative and combinative attention.

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[1] I am assuming, here, that spatial (as well as temporal) relations hold amongst sense-experiences *as such*, apart from reference to physical realities.

That which connective activity cognitively determines is the *existential form* of the object. Thus separating, combining, and connecting are three phases of a progressive cognitive process which may be contrasted with phases of the progressive determination of *character*, in the narrower sense of the term character. When we have to use the term characterisation in the generic sense, we may distinguish its two species by the terms internal characterisation and external characterisation. Now the kind of substantive which can be not only internally characterised, but also characterised as regards its spatio-temporal connexions, will be called an *existent*. So that briefly an existent is a kind of substantive which can be both internally and externally characterised. In fact, a substantive proper—as understood in its ultimately genuine sense—may be identified with an existent. I propose to adopt the word *descriptum* for any term (to whatever logical category it may belong) which is structurally united with an appropriate adjective; the adjective thus united with the descriptum will be termed its *description;* and the union of the adjective with the substantive—*i.e.*, 'the descriptum as described'—will be termed a '*descript*'. An extended application of the notion of a descript will be discussed later. The introduction of the notion of internal contrasted with external characterisation will be serviceable in a later discussion of the burning problem concerning internal and external relations.

Now since an existent extends through a certain portion of Time (and, it may be, through a certain portion of Space), it contains *parts* which themselves extend through Time (and Space), and to each of which separative acts of attention may be directed. Thus a single extended existent is substantivally both one and many. Again, taken as substantivally one, it may be characterised by a plurality of adjectives; *e.g.*, cold, hard, smooth, which may be said to be *fused*. The apprehension of any one of a number of fused characters will be termed *discernment*:—a notion which must be rigidly distinguished from separation on the one hand and discrimination on the other. We *discriminate* between comparable qualities, such as cold and warm, hard and soft, smooth and rough; but, when we discern the characters cold *and* hard, we do not discriminate *between* them; neither do we apprehend them as manifested *separately*, but, on the contrary, as characterising the same substantival existent. When separative attention has been directed to different existents—characterised severally (say) by the fused qualities, cold and hard, warm and hard, cold and soft, warm and soft,—acts of comparison take place by which, while we discriminate and identify the comparable qualities in their several manifestations, we are at the same time discerning each of the noncomparables within its several fusions. To these psychological attitudes logical attitudes correspond. Thus an act of discernment is essential in predicating several different adjectives of the same substantive; while acts of discrimination and identification are essential in predicating the same adjective of several different substantives; and, underlying all, is separative attention to one and to another substantival existent.

To continue our discussion of thought in its general aspect of characterising an object. We have to examine the nature of characterisation, which occurs in every case of joining adjective with substantive; for example 'a cold sensation,' 'a tall man'. In order to understand the verbal juxtaposition of substantive and adjective, we must recognise a latent element of form in this construct, which differentiates it from other constructs,—which also are necessarily expressed by a juxtaposition of words. This element of form constitutes what I shall call the *characterising tie.* The *general* term 'tie' is used to denote what is not a component of a construct, but is involved in understanding the specific form of unity that gives significance to the construct; and the *specific* term 'characterising tie' denotes what is involved in understanding the junction of substantive with adjective. The invariable verbal expression for the characterising tie is the verb 'to be' in one or other of its different modes. To think of 'a tall man' or of 'a cold sensation' is to think of 'a man as being tall,' 'a sensation as being cold'. Here the word 'being' expresses the characterising tie, and the fact that in some cases the word may be omitted is further evidence that the characterising tie is not an additional component in the construct, but a mere formal element. The distinction and connexion between substantive and adjective corresponds to —and in my view *explains*—the distinction and connexion between particular and universal.[1] Ultimately a universal means an adjective that may characterise a particular, and a particular means a substantive that may be characterised by a universal. The terms particular (or substantive) and universal (or adjective) cannot be defined as functioning in isolation, but only as they enter into union with one another through the tie of characterisation. In philosophical discussions which have become historical, as to the nature of the particular and the universal, confusion has been prevalent owing to the two applications in which such a term as 'characterise' is used—the one fundamental and the other elliptical. In the phrase "such or such a quality characterises such or such an object," the term 'characterises' is used in its fundamental sense. On the other hand, in the phrase 'the thinker characterises such or such an object,' characterises means "*cognitively determines the character of*," and is thus shown to have been used elliptically. Thus the particular has come to be thought of as an uncharacterised object. But this cannot be taken to mean 'an object without any character'; for every object must have character. The phrase 'an uncharacterised object,' used to denote the particular, must therefore be understood to mean 'An object whose character has not been cognitively determined'. There is of course no ambiguity in the *use* of the term 'characterise,' since the context prevents confusion; I have freely used the term in both applications, as when I have spoken of a quality *characterising* an object and of an object given *to be characterised.* This last phrase is practically equivalent to the previous description of the particular as what is uncharacterised, and this I can only understand to mean 'not cognitively determined as regards character'; so that I hold that the question as to whether particulars as such exist falls to the ground. I am satisfied with the Aristotelian dictum that the universal exists—not apart from—but *in* the particular, which I interpret to mean that the adjective exists—not apart from—but *as characterising* its substantive; to which I would add that the substantive exists—not apart from—but *as characterised by* its adjective.

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[1] Here the terms particular and universal are used in the sense current in philosophy, and not in their familiar application in elementary logic, where they stand for subdivisions of the proposition.

So far we have treated the adjective solely in its reference to the substantive which it characterises. We have now to consider a type of adjective whose meaning when analysed exhibits a reference to some substantive other than that which it characterises. Thus we may characterise a certain child by the adjective 'liking a certain book,' or a certain book by the adjective 'pleasing a certain child'. These adjectives, predicated respectively of the child and of the book, are complex; and when we take the substantival reference out of this complex, there remains the term 'liking' or 'pleasing'. These terms do not function as completed adjectives, and will be called relational adjectives. Adjectives of this type may be ranged in a series, according to the number of substantival references involved in their completed form. As examples of the type of adjective which involves *two* substantival references, we may take 'giving x to B' and 'lying between X and Z'. 'Supporting P in his accusation of D before J' illustrates the type which involves *three* substantival references. As an example in which an adjective of still greater complexity is predicated, we have :—'G opposes K in his defence of D against the charge of stealing *w* from P before J'. Returning to the simplest form of complexity, we will consider the proposition X likes Y, X is greater than Y. The notion of 'X as liking Y' or of 'X as being greater than Y' is to be distinguished from the notion of 'Y as liking X' or 'Y as being greater than X'. At the same time, the thought of any assigned relation of X to Y involves the thought of a definitely assignable relation of Y to X: for example, the thought of X as liking Y involves the thought of Y as pleasing X; and the thought of X as being greater than Y involves the thought of Y as being less than X. Conversely the thought of "Y as pleasing X" involves the thought of "X as liking Y" :—in fact the two are equivalent for thought. Two relational adjectives, such as liking and pleasing, each of which in this way involves the other, are called correlatives. Language in many cases supplies us with names of correlatives, such as greater than, less than. When the relation is grammatically expressed by a transitive verb, the opposition between the *active* and *passive* inflexion is the means which language adopts to express the mutual implication of correlatives; thus pleasing means liked by; liking means pleased by; "X likes Y" means "Y is liked by X," *i.e.*, Y pleases X, *i.e.*, X is pleased by Y. Each of two correlatives is called the converse of the other. Except in the case of the active and passive voice, there is no general rule of language according to which the converse of a given relative can be expressed, and therefore a knowledge of the words in current use is required in order to express a relation in its converse form, as for instance, when we pass from "X is greater than Y" to "Y is less than X". But the object of thought which is verbally expressed in these two different forms is the same, just as we should say that the object of thought expresed by "X is liked by Y" is the same as that expressed by "Y likes X". It must be pointed out that 'liking Y' or 'liking someone,' etc., is a completed adjective; and, in general, out of a relational adjective we may construct a completed adjective by supplementing the substantival reference. And conversely most ordinary adjectives in use can be analysed so as to elicit a relational element as a component. Thus *amiable* contains the relational element 'liked by,' and may be roughly defined 'liked by most people'. Again *substantive* words are constructed out of relational adjectives, *e.g.*, shepherd, which means 'a person who takes care of sheep'; but to take the substantives 'shepherd' and 'sheep' as examples of correlatives involves a double error, since the true correlatives involved in the meaning of shepherd are 'taking care of' and 'taken care of,' which are adjectival and not substantival; while the meaning of the word 'sheep' contains no relational element at all.

An ordinary complete adjective will be termed (1) monadic; any incomplete adjective (such as greater than, accusing) will be termed a coupling adjective: a general type, to be subdivided into (2) diadic, (3) triadic, (4) tetradic . . . adjectives. These terms are respectively illustrated by (1) amiable, (2) liking, (3) giving to, (4) accusing of, before, (5) accusing of, on behalf of, before, . . . where the significance of the *prepositions* will be understood by supplementing the substantival references as introduced in our original examples. Now the equivalence of the two propositions 'x is greater than y.' and 'y is less than x' will be rendered still more explicit by reformulating them thus:—

x to y is-as greater than to less than
or y to x is-as less than to greater than

Similar formulæ could be applied to triadic and higher orders of adjectives; thus 'X receives b from Y' = 'Y gives b to X' = . . . will be rendered:—

X : b : Y is-as receiving : given by : giving to
or Y : b : X is-as giving : given to : receiving from.

Our immediate concern will be with coupling adjectives which are diadic. Given any two substantives—say x and y—we may construct what will be termed a *substantive-couple*, expressed by the phrase 'x to y'. Similarly, given any two correlative coupling adjectives—say greater than and less than—we construct what will be termed an *adjective-couple*, expressed by the phrase 'greater than to less than'. The significance of a *substantive-couple* is to be explained by defining it as that which may be characterised by an *adjective-couple;* and the significance of an adjective-couple, by defining it as that which may characterise a substantive-couple. Thus the relation of substantive-couple to adjective-couple is the same as that of an ordinary adjective to an ordinary substantive; and just as the latter are united through the characterising tie, so are the former. Again, just as we say that the *extension* determined by an ordinary adjective is comprised of the substantives of which the adjective may be truly predicated, so we may say of an adjective-couple that the *extension* which it determines is comprised of the substantive-couples of which the adjective-couple may be truly predicated. A further advantage of formulating the relational proposition in terms of a substantive-couple and an adjective-couple, is that it enables us to explain the process of relational conversion, which may be illustrated as follows :—

(1) x is greater than y
$\therefore$ (2) x to y is-as greater than to less than
$\therefore$ (3) y to x is-as less than to greater than
$\therefore$ (4) y is less than x.

In passing from (1) to (2) the introduction of the term 'less than' depends merely upon the knowledge of the arbitrary usage of language; but the logical validity of the step rests upon the fundamental principle of thought that every relation has its converse. Each step also requires that the order in which the adjective terms are mentioned is to be understood to correspond to that in which the substantive terms are mentioned. In dealing with triadic and higher types of relation the order in which the terms are mentioned is to be interpreted cyclically, as in the original example of a triadic relation; and by this means a permutation of three or more terms is effected in the same manner as of two.

This account of relational adjectives leads to a consideration of another species of tie which will be termed the *coupling tie*. In the phrase—x to y—and in the phrase—greater than to less than—the word *to* has been chosen to indicate this tie, so that the effect of the coupling tie is to construct a substantive-couple or an adjective-couple. My formulation of the relational proposition, in which the presence of the coupling tie is explicitly indicated, is suggested by the mathematical expression for a ratio; in fact, the arithmetical ratio is a special application of a substantive-couple of which we predicate an adjective-couple. Thus, when we state that this line to that line is as 5 to 3, we are predicating the same adjective-couple of the two substantive-couples—"This line to that line" and "5 to 3". In this case the coupling adjective is "five-thirds of," the converse of which is "three-fifths of". The unitary adjectives of length predicable of the lines themselves as monadic substantives might be, for example, ten inches and six inches respectively. Instead of the preposition *to*, which is perhaps the most common preposition in verbal use to indicate the coupling tie, other prepositions such as *of*, *by*, *for*, *at*, *with*, *in*, and almost any other preposition or prepositional phrase, such as *in reference to*, equally serve to indicate the nature of the coupling tie. We must not, however, in general say that the preposition denotes a mere tie; for a difference of preposition often means a difference in the relation predicated. For example—x is influenced to move *towards* y—has a different meaning from—x is influenced to move *away from* y. And this difference is more simply shown to involve a difference of relation if we substitute—"attracted to" and "repelled from". In other words, prepositions in actual verbal use express determinate *modifications* of relation. The essential feature of a tie on the other hand is that it is incapable of modification, and that in consequence it is frequently dispensed with in actual language.

Whenever a tie (whether it be the characterising tie, or the coupling tie or any other) does not appear as an actual word, there are conventions of language which indicate its presence. In languages in which inflexion is largely used, such as Latin and German, there are two main kinds of grammatical rule; namely, the rules of concordance and the rules of governance. We shall find that the rules of concordance correspond to the characterising tie; and those of governance to the coupling tie. The rules of concordance are, briefly, that adjectives and verbs must agree in gender, number, and case, with the substantives that they characterise; so that the characterising tie is not necessarily expressed by use of the word "to be" but merely by inflexion. On the other hand, the rules of governance always determine the *case*, genitive, dative, accusative, or ablative, which is required in using any transitive verb or relational adjective or preposition, coupled with the substantive whose case is to be thus modified. We find, especially in Latin, that considerable changes in the *order* of words (which may vary for purposes of rhetorical significance) are permissible because of the inflexional changes which are understood to indicate (1) how the words are to be attached in thought by the characterising tie as indicated by grammatical *agreement;* and (2) how they are to be attached in thought by the coupling tie, as indicated by grammatical *governance.* Furthermore, where the case-inflexion is used (with or without a preposition) the modification of case signifies not only the coupling tie, but also the special modification of the relation that is to be understood. It follows that, strictly speaking, the coupling tie seldom appears as a word, but is only indicated by a modification of case. Turning from these languages to English, the characteristic of English is that there are no requirements or rules either of concordance or of governance, except in two instances; namely, the first, second and third persons, singular and plural in many verbs (which illustrate the *characterising* tie) and the accusatives —him, her, them, whom (which illustrate the *coupling* tie). All the other instances of inflexion in English—for example, the possessive pronouns, and the tenses of verbs—are used, not according to any rules of concordance or governance, but to express distinctions of meaning. The difference between the two kinds of inflexion—the one being significant and the other syntactic—is brought out by comparing the English 'her father' or 'his mother,' with the French 'son père' or 'sa mère'. The rule of syntactic concordance, in this case, prevents the distinction between 'his father' and 'her father,' and so on. What in English takes the place of the conventional rules of concordance or governance, is the equally conventional *ordering* of the words. This holds in every instance, with the exception of those few conventional inflexions which have been mentioned above.

The coupling tie,—which might have been called the prepositional tie, in consideration of the grammatical rules of governance, or again the relational tie, in consideration of the philosophical problems that have been raised in regard to the nature of relation—is of fundamental importance in discussing such paradoxes as Mr. Bradley and others have found in the general notion of relation. The paradox is briefly brought out in the following contention: when we think of x as being r to y, we have first to relate x to y by the relation r, and then relate the relation r to x by—say r'—and r to y by—say r'', another relation. This again will require that x should be related to r' by the further relation r''', which will lead to an infinite regress on the side of x, and a similar regress on the side of y. This paradoxical contention is met by pointing out that in constructing an object out of the constituents x, r, and y, we do not introduce another constituent by the mere fact of constituting these constituents into a unity. The pretence of paradox is due to the assumption that to the act of relating or constructing there corresponds a special *mode* of relation; so that a tie is confused with a relation. That a tie and a relation are quite distinct is brought out by considering the fact that if, for a given adjective—whether ordinary or relational—we substitute another adjective, we shall have constructed a different unity; but if we drop the so-called *relation* of characterisation with a view to replacing it by another, then no unity can be constructed. Similarly the coupling of terms is not a *mode of relating* them for which another mode of relation could be substituted; for, if they were *uncoupled* no relational unity could be constructed. The difference between different kinds of tie, *e.g.*, the coupling and the characterising tie, is logically involved in the difference between the natures of the components tied. Thus the use of an adjective in general involves the characterising tie, by which it is attached to a substantive; and the use of a relational adjective in particular further involves the coupling tie, by which the two substantive terms are attached to one another. In explicitly talking of a tie, I may be misunderstood in appearing to adopt an atomistic view of the elements of thought; but my purpose is, on the contrary, to remove from the theory of relations all taint of atomism; and this is partially effected by denying that the tie is a component or constituent in the construct. The characterising tie resembles a relation in the respect that it can be converted; thus, the tie of adjective to substantive is that of characterising, while the tie of substantive to adjective is that of being characterised by.[1] An infinite regress would arise if we spoke of the adjective as being characterised by the characterising of the substantive; or again, of the substantive as being characterised by being characterised by the adjective. This infinite regress is virtually identical with that put forward by Mr. Bradley. My view would be chargeable with leading to such an infinite regress, if, in introducing the notion of the characterising tie, I had meant to *analyse* the ordinary proposition such as "This is cold," so as to elicit a hidden component expressed by the word "characterise," when I substitute (for the simple form) the expression "This is characterised by (the adjective) cold". The substitution of phrase is not intended for an *analysis* in this sense; since I have maintained that the constituents of this simple proposition are exhaustively expressed by the two words "this" and "cold".

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[1] In fact, when we explicitly formulate propositions in terms of characterisation, then *characterising* and *characterised by* have all the *formal* properties of relations, and might be called *structural* relations.

(*To be continued.*)

II.—INDIVIDUALITY.

By Chas. A. Mercier.

In nothing has philosophic investigation a more direct and intimate bearing on practical affairs than in furnishing practical workers with a clear and definite notion of individuality. To define clearly what is meant by an individual is extraordinarily difficult. A definition is very urgently needed in various branches of science, especially in biology; but philosophy is so remote from science and so completely cut off from it that the need is quite unknown to philosophers, and as far as I know no attempt has been made to satisfy it. Individuality is extraordinarily elusive. Usually, when we speak or think of an individual, the mind recurs to an individual human being, and not only takes this individual as a specimen, but also regards it as the type. Very many writers, amongst them many writers on science, who should know better, speak of an individual as synonymous with individual man or woman, and presumably would be surprised to learn that there are other individual things. An individual man or woman is, in the first place, physically separate from other things; and, in the second, is a physically continuous whole, every part of which is in physical continuity with every other part; and since the individual human being is taken as the type of the individual, we are very apt to assume *sub silentio*, and without explicitly admitting the assumption, that these two features are necessary in order to constitute an individual, and are not only necessary, but also are sufficient. A very cursory examination of individuals is enough to show that this assumption is erroneous. Physical separateness or discontinuity from other things is by no means necessary to our concept of an individual. A tree is an individual tree, though it is physically continuous with the ground on which it grows, or if it be said that it is not actually continuous with the ground but only in close contiguity with it, the same can scarcely be said of an individual hair, which is as much an individual thing when it is growing on the head as when it is plucked out and separated; and the same thing can certainly not be said of an individual country, or peninsula, or bough of a tree, or fiord, or arm of the sea, each of which is an individual thing although it is in physical continuity with other things, from which it is in some cases not definitely demarkated or distinguishable. Nor is physical separateness or discontinuity from other things always sufficient to constitute individuality. The Isle of Wight and the Isle of Thanet are each in a sense physically discontinuous with Hampshire and Kent respectively, yet they are not individual counties, they are parts of counties.

Nor is the physical continuity of its parts either necessary or sufficient to constitute an individual. A box is an individual thing though its lid may lift off. A faggot is an individual faggot, though its component sticks are discontinuous. A bushel of wheat and a pound of flour are individual things though their parts are discontinuous. In these cases the parts, though not continuous, are contiguous. They are in contact with one another; but the parts of an individual thing need not even be contiguous. A swarm of bees is an individual thing as much when the bees are in flight and separated from one another as when they are conglobated into a compact mass. A fleet of ships is an individual thing, although its component parts are widely separated. The Consular Service is an individual thing, although its parts are scattered all over the earth.

It is in biology that the difficulty of defining an individual is greatest, and some of the problems presented by biology are of extreme difficulty. A patch of lichen presents all the appearances of an individual plant. It has a uniform appearance and a definite boundary. It is distinct from its surroundings; its parts appear to be continuous, and are contiguous. More than this, it passes the crucial biological test of reproducing its like. A patch of lichen not only spreads and grows circumferentially into a larger patch, but also reproduces new and similar patches at a distance by dispersing from its surface reproductive elements. Yet the lichen is not one individual plant, but two. It consists of two plants of very different natural orders, a moss and an alga, growing together and intimately commingled. Is it one individual or two?

The flower of a daisy has all the appearance of a single individual. It has definite boundaries; it is made up of differently shaped parts, disposed on a definite plan, of a central disc surrounded by a fringe of rays. Its parts are contiguous, and contribute harmoniously to the same end of attracting insects. Yet it is not one flower, but very many flowers, each complete with the vital parts of a flower, the pistil and stamens. Is it one individual or many individuals?

In biology, the unit is the gamete, or fertilised egg-cell, and all that grows from a single gamete is a single individual. The ovary is part of the gamete, and the egg-cells are parts of the gamete, as much when they leave the ovary as when they were embedded in it; and they remain parts of the gamete until they are fertilised, when each of them becomes a new biological individual. But it often happens that an egg-cell, without being fertilised, and therefore while still biologically a part of its parent, will grow up into a likeness of that parent, and form an apparently complete plant or animal, separate from the parent, and in structure indistinguishable from the parent. Are they then two individuals, or are they but parts of one individual? They may separate from the parent, or they may not; and if they do not, they may not completely resemble the parent, but may differ both in structure and function, and the parent and its developed offspring may mutually work together and in different ways assist in each other's survival; but should we say assist in each other's survival, or assist in the survival of the whole individual, of which each forms a part?

If a sheep or a rabbit is cut in half, no one would consider each separate half to be an individual sheep or rabbit; and if a rotifer is cut in half, no one would consider each separate half to be an individual rotifer; but suppose the head part of the rotifer grows a tail, and the tail part grows a head, are they now one individual rotifer or two? and if they are two, when did they cease to be parts of one and become two?

All the parts of a tree—root, trunk, branches, twigs, leaves, and flowers—are in physical continuity; and yet each joint or internode between two successive leaves or twigs is not only an individual joint, but is also in a certain sense an individual plant; for it may be cut off the tree and planted in the ground, where it will grow into a second tree. This second tree is an individual tree, but is it an individual plant? It is the product of the same gamete as its parent, and therefore biologically is the same individual. And there is other evidence to support this view. If, as is the case with some plants, the flowers are not fertilisable by the pollen of the same flower or of other flowers growing on the same tree, but require pollen from a different individual tree to fertilise them, then the flowers of the cutting will not fertilise those of the parent tree, nor will the flowers of the parent tree fertilise those of the cutting. Biologically, therefore, the two trees are still one individual plant. Even if many cuttings are taken and grow into separate trees in many counties, and if cuttings from these again are taken and dispersed over the world, still, as long as the flowers from one specimen will not fertilise the flowers of another, all the trees are biologically a single individual plant.

If this view appears at first to be startling, its strangeness is reduced when we recall other instances, of which there are many, of scattered parts composing but one individual. One has already been given. The Consular Service is an individual thing. That we so regard it is shown by the way we speak of it. We speak of it as *the* Consular Service. We speak of it as *a* good Service or *a* bad Service. We say that *it* ought to be reformed, reconstituted, or left alone. We say that a man belongs to *it*. *It* is contemplated as an individual thing, although its part or members are separately dispersed all over the world. In just the same way a plant may be regarded as an individual thing, although its parts or members are separately dispersed all over the world.

We are in the habit of regarding an individual animal as having all its parts continuous, and all enclosed within a continuous skin; and conversely, we regard any collection of animate parts that is continuous and enclosed within the same skin as an individual animal; but there are colonies of actinozoa that are enclosed within a single skin and are physically continuous with one another, and yet are regarded by zoologists not as an individual animal but as a colony consisting of many individual animals. In as far as it is a colony, it is an individual thing; but in as far as it is a colony of animals it is not an individual animal, but many individuals.

It is manifest from these instances that individuality resides, not in things themselves, but in the way we contemplate them. An individual is a contemplate, a mental construct, just as a class is a contemplate and a mental construct. The individual exists in the mind only, just as the class exists in the mind only. What exists in the outer world is not a class of things, but a number of things alike in some respect, and by reason of that likeness the mind is able to gather them up and group them together, not in physical propinquity, but in mental contemplation. The mind contemplates them together, and thus constructs for itself and in itself a class. It is precisely the same, *mutatis mutandis*, with the individual. What exists in the world outside the mind is not an individual, but something that is contemplated as an individual, some thing or things that the mind contemplates separately from other things and unifies into a single contemplate. It is one, not in physical separateness from other things, or in the physical continuity of its parts, but in contemplation. We may unify the parts by contemplating them together, and then they constitute a single individual, or we may diversify the parts by contemplating them separately, and then they constitute many individuals, either individual parts of one whole, or separate individuals, according as they are contemplated.

Classes are constituted of individuals. Individuals are constituted into classes. Between the individual and the class there is an intermediary stage—the Plural. The plural is always confused with the class and mistaken for the class, by the ordinary man, and still more by the logician, to whom the ordinary man probably owes his blunder. Logicians divide classes into two kinds, the distributive class and the collective class; but it is manifest enough that a class is one individual thing, and one thing can neither be distributed nor collected. What logicians mean when they speak of the distributive class and the collective class is the distributive plural and the collective plural. What is or may be distributed or collected is not the class, but the things in the class; and to confuse the things in the class with the class itself is to confuse the potatoes with the sack. A sack of potatoes is one individual thing, and as one thing may be weighed, carted about, bought, sold, or valued. But the sack cannot be collected, though the potatoes are collected in the sack; and the sack cannot be distributed, though the potatoes may be taken out of the sack and distributed. When we speak of a sack of potatoes being collected, what we mean is that enough potatoes to fill a sack were collected; and what we mean when we say a sack of potatoes was distributed is that enough potatoes to fill a sack were distributed; and it is pretty obvious that the potatoes cannot be distributed until they are taken out of the sack, nor collected unless they are out of the sack. In other words, a distributive class or a collective class is an impossibility. What is meant is a distributive plural or a collective plural.

The concepts of the individual, the plural, and the class grow up together and are necessary to one another. An individual can scarcely be conceived at all, can certainly not be fully and clearly conceived, until it is contemplated as separate from other things; and separateness is a step to plurality, though it may not itself be plurality. Certainly, there can be no plurality without separateness. The plural can scarcely be conceived at all, can certainly not be fully and clearly conceived, until individuals are seen to be alike. Thus the plural presupposes the individual, as the individual presupposes the plural. The class presupposes both. A class consists of individuals that are alike in some respect. It consists of individuals in the plural; and in my opinion the primary use, value, and purpose of constituting classes is to enable us to speak of things in the plural by a common name, and so to economise time and effort.

Things are to us as we contemplate them. Here is a heap of stones. Contemplate them separately, and each is an individual stone. Contemplate them, not separately, but as separate, and they are plural. Contemplate them as separate but as collected together, and they form a distributive plural, for now each one of them can be taken away and distributed. Each separate stone can be thrown at a separate dog. Contemplate them as not merely collected but combined together, and they form that combined plural which logicians perversely call a collective class. The stones, still retaining their separate individuality, are now in combination enough to fill a cart. Contemplate them still as separate, not separately, but as separate and like one another in respect of being water-worn and rounded, and they are still a plural, but a plural that is capable of entering into the constitution of a class. Contemplate them no longer as separate, but as fused, amalgamated, and unified into a single thing, and they become an individual. This individual, if contemplated solely with reference to its internal composition, as constituted of individual stones that are alike, is an individual whole. Contemplated with respect to its external relations, as distinguished from its surroundings, it is an individual heap. It is a whole heap or a separate heap, or it is a heap of stones, but in either case it is one individual thing. Contemplate the stones as like each other and unlike other stones in respect of being water-worn, and they form, when integrated together with other similar stones, the class of water-worn stones, another individual thing.

Individuality, then, is a mode of contemplating things. An individual is a mental construct or contemplate, as much as a class is. To constitute an individual it is not necessary that it should be physically separate from other things, or even that it should have any physical existence. A custom is an individual thing, an idea is an individual thing; but they have no physical existence. But the individual must be separately contemplatible, and separately contemplated. It is not necessary that the parts of an individual should be physically continuous, or even contiguous, but it is necessary that they should be unified in contemplation. We arrive, therefore, at the following definition:—

An individual is that which is contemplatible, with respect to its external relations as separate from other things, and with respect to its internal composition as unified.

KINDS OF INDIVIDUALS.

As individuals are constituted by the mode of contemplation, so they are classified by the mode of contemplation. We have seen that an individual is constituted by contemplating it in a twofold aspect, that is to say, as to its external relations and as to its internal constitution. The first division that can be made of individuals depends upon which of these modes of contemplation we adopt as primary, and which we relegate to secondary importance.

Contemplated primarily with respect to internal constitution, their external separateness from other things being taken for granted, and for the purpose in hand ignored, individuals may be regarded as consisting of constituent individuals that are discrete and alike. An individual so constituted is a CLASS.

Or it may be contemplated as consisting of parts that may be discrete or continuous, alike or unlike. Such an individual is a WHOLE.

Contemplated primarily with respect to its external relations to other things, its internal composition being for the purpose in hand relegated to a secondary position, an individual may be regarded as like other individuals. In that case, it is one of a plural; it is capable of entering into the composition of a class; and as it is inseparably connected with plurality, it may be called a NUMERABLE INDIVIDUAL.

Or, still contemplated primarily with respect to its external relations, the individual may be regarded as unlike anything else. In that case it is no longer susceptible of plurality, or even of singularity. It cannot be spoken of with others as constituting a plural; it cannot even be spoken of in the singular, nor can it enter into the composition of a class. Such an individual is a UNIQUE INDIVIDUAL.

Unique individuals are of two kinds, according to the mode of measurement of which they are susceptible. Some are measurable by amount, and of them there may be much or little. Such individuals, of which gold, bread, and trade are examples, may be called SUBSTANTIAL INDIVIDUALS, or SUBSTANCES.

Other unique individuals are insusceptible of measurement by amount, and cannot be much or little, but they are measurable by degree, and may be rather or very, slightly or intensely, nearly or completely. Such individuals, of which hard, hardness, full, and fullness are examples, may be termed QUALITATIVE INDIVIDUALS, OR QUALITIES.

Each of these kinds of individual is fruitful on further examination, and for the present purpose we may limit our examination to three aspects:—Experience, Measurement, and Kinds.

Before entering on this examination, it may be well to set forth in a table the results we have already attained.

Table I.

An individual is that which is contemplatible separately from other things, and as unified in its composition.

I. Contemplated primarily with respect to internal composition, it may be regarded as composed

A. Of individuals that are discrete and alike.
It is then A Class.

B. Of parts that may be continuous and unlike.
It is then A Whole.

II. Contemplated primarily with respect to its external relations, it may be regarded as

A. Like other things, and is then A Numerable Individual.
B. Unlike other things, and is then A Unique Individual.
    1. And measurable by amount A Substance.
    2. And measurable by degree A Quality.

I. A. The Class.

1. Experience.—We have no experience of classes. They are a mode of contemplating things, and have no existence outside the mind. In our commerce with our circumstances we never come across a class. If we want a class we have to make it for ourselves. A class is a fiction. When we meet in experience with things that are alike in any respect, we may collect them together in our minds, contemplate them with respect to their likeness to one another, fuse them together mentally into a single contemplate, and call this contemplate a class; but the things are not collected together anywhere but in our minds, still less are they fused together anywhere but in our minds. A class of men, or of propositions, or of regulations, consists of individual men, or propositions, or regulations, that are not, or need not be, collected together anywhere outside of the mind that classes them,

and cannot outside that mind be fused together. The class is a fiction. It is a convenient mode of contemplating things, but we never come across it in experience. Many other individuals are similarly modes of contemplating things.

2. MEASUREMENT.—Classes are susceptible of measurement in two ways: by size and by comprehensiveness. A class may be large or small, according as it is composed of many individuals or of few; it may be comprehensive or restricted, according as the individuals included in it are diverse or are alike in other respects than the class-quality that enables us to gather them into a plural and fuse them into a class. But, as already explained, a class cannot be numerous or few, though of course classes may be so.

3. KINDS.—A class is an individual thing; and viewed with respect to its internal composition, it may be divided into kinds according to the nature of the individuals of which it is composed, as a class of men, or a class of regulations. These, however, are not, strictly speaking, kinds of classes. The classes are of the same kind, though the individuals that compose the respective classes are of different kinds. In order to divide classes into kinds, we must contemplate them no longer with respect solely to their internal composition, but must regard them in a different aspect, that is to say, with respect to their external relations with things outside themselves. Then classes become susceptible of plurality, they become capable of entering as individuals into the composition of other classes; then, in short, they become numerable individuals. The class that enters as an individual into the composition of another and larger class is called a Species, and the larger class into whose composition it enters is called a Genus. Species and Genera are the only kinds of classes.

I. B. THE WHOLE.

1. EXPERIENCE.—Although the whole is, like the class, a way of contemplating things, yet unlike classes, wholes may be met with in experience. Nevertheless, a whole is experience contemplated in a certain way, and if we choose so to contemplate it, we can construct an imaginary whole out of that which, as met with in experience, is not a whole, or not a complete whole. An apple whose skin is unbroken is a whole apple, and is thus met with in experience; but there are certain sharp-pointed whorled shells that are never met with whole in experience. By the time we have an opportunity of examining the shell, the point is always broken off. A part is always missing. Nevertheless, we can always in

imagination supply the part and contemplate an imaginary whole consisting of the part we do not see added to the part we see; or we may take it as it is, and ignoring the missing part, may contemplate the remainder as a whole, as when we say the whole shell, as we found it, was so long and weighed so much. A whole is, therefore, like a class, a mental construct or contemplate, and may be a fiction; but unlike a class, it need not be altogether fictional. It may be met with in experience; but even if it is, it is not to us a whole unless we so contemplate it. All depends on the mode of contemplation, which in its turn depends on the purpose in view.

2. Measurement.—Wholes, like classes, are constituted by contemplating primarily their internal composition; and like classes, they are measured by the amount and character of their contents, as large or small, comprehensive or restricted. Unlike a class, a whole is rarely confused with its components. People often speak of a class in the plural, meaning the things in the class; but they never speak of a whole in the plural, meaning the parts.

3. Kinds.—Wholes are of two kinds, complete and incomplete. If all the parts of a whole are present in it, it is a complete whole: if any part is missing, it is an incomplete whole, and is in one sense not a whole; but things are to us as we contemplate them, and we may, if we please, contemplate a number of parts in due relation to one another as a whole, though an incomplete whole, even if some of the parts are missing, and must be supplied by our imagination. For some purposes this mode of contemplation is convenient; for others it is necessary. The mode of contemplation depends on the purpose in view.

II. A. The Numerable Individual.

1. Experience.—The numerable individual may be encountered in the world of experience very much as we contemplate it, that is to say, as isolated, detached, disconnected from other things, or apparently so, as for instance when we see a cloud or a leaf floating in the air; or it may be partially attached to other things, as a tree to the ground, or a house in a row to the houses on either side of it; or it may be wholly embedded in some medium, as a fish in water; or the separation between it and other things may be wholly imaginary, as when in studying hydrostatics we contemplate an imaginary plane of water at a certain depth in a vessel of water; or its whole constitution as an individual may be imaginary, as when we regard a fleet, or a railway, or the

Diplomatic Service as an individual thing. Whether the actual individual we are contemplating is met with in experience or no, some numerable individuals are met with in experience, and these constitute to us *Specimens* of numerable individuals. The experience of specimens enables us to imagine with ease not only other numerable individuals of the same kind, but also other kinds of numerable individuals, specimens of which are not met with in experience.

2. MEASUREMENT.—All numerable individuals are measurable by size, as large or small, and many are measurable in other ways, according to the kind to which they belong and the purpose in view.

3. KINDS.—Numerable individuals are susceptible of division into several very different kinds, according to the disposition and similarity or otherwise of their parts, and according to the principle on which those parts are unified into an individual. The Class and the Whole are constituted by primarily contemplating their internal composition. When we desire to divide them into kinds, we abandon this mode of contemplation, and turn our attention to their external relations. The numerable individual is constituted by primarily contemplating its external relations. When we divide numerable individuals into kinds, we abandon this mode of contemplation, and turn our attention to their internal composition.

Thus, the first division of numerable individuals is into those whose parts follow one another in succession and those whose parts coexist.

The first are Serial individuals, such as a melody, which is a succession of musical notes; a speech, which is a succession of spoken sentences; a journey, which is a succession of changes of place; and so on. Serial individuals may again be divided into the Simple, such as those instanced, in which the succession is single, and the Compound, in which the succession is multiple, such as a shower of rain, a battle, the building of a ship, a disease, and so forth. In these a number of simultaneous successions go to make up a single contemplate, which is then regarded as an individual thing, and signified by the attachment of the indefinite or definite article.

Coexistent individuals may be Simple or Compound, according as their parts are or are not continuous.

A numerable individual whose parts coexist and are continuous is a Simple coexistent individual. Such is a man, a tree, a country, a house, an animal, or a garden.

A numerable individual whose parts coexist but are discontinuous or discrete is a Compound individual, and of Compound individuals there are two kinds.

The first kind of Compound individual consists of parts that are unified into an individual by their likeness to one another. Such are a layer of dust, a ton of coals, a ream of paper, a bushel of wheat, a pair of boots, a covey of partridges, a pride of peacocks, an audience, a crowd, a mob, a congregation. In each case we are contemplating a number of things aggregated together and contemplated as a single thing, as an individual; and in each case the principle that enables us, and in some sort compels us, to unify the several components into a single object of contemplation is their likeness to one another. As these individuals are constituted by the aggregation together of like parts, they may be called Aggregate Individuals.

The second kind of Compound individual is composed of parts that are unlike one another, and the question immediately presents itself: If the parts are unlike one another, how are they to be unified into a single individual? What is the principle of unification? It is simple, and consists in devotion to a common purpose. A railway is contemplated as a single thing, as an individual, and is so spoken of; and a railway consists of many different and diverse parts. It consists of the permanent way, the rolling stock, the stations, the signalling apparatus, the staff of various grades, the Board of Directors, the shareholders, the capital, and so forth, and all these many discontinuous and diverse things are contemplated together and unified by the mind into a single thing—a railway. This is possible because we contemplate all the diverse parts as devoted to the common purpose of transport by rail. Similarly, a venetian blind is a single thing, yet it consists of many discontinuous parts of diverse nature—the slats, the tapes, the cords, the pulleys, and so on. But since all these are devoted to the common purpose of keeping out the sunlight, we are able to contemplate them as a single thing, and to speak of a venetian blind. On the same principle a hive of bees may be contemplated as a single thing, though it consists of bees, and comb, and grubs, and honey, and propolis, and of the cavity or structure that contains them. A fleet is a single thing, though it consists of many discontinuous and diverse things—different kinds of ships, different ranks of men, different calibres of guns; but since all are devoted to the common purpose of fighting at sea, all may be unified in contemplation into a single thing. So it is with an army, a factory, a library, a museum, and a multitude of other individuals. Since individuals of this kind are unified by the devotion of their parts to a common purpose, they may be called Corporate Individuals.

The kinds of numerable individuals may therefore be tabulated as follows:—

Table II.

That which is contemplated primarily in its external relations with other things and is found to be so like other things that it is susceptible of being contemplated together with them in the plural is a Numerable individual.

Contemplated secondarily as consisting of parts, the Numerable individual may consist of parts

A. That follow one another in succession	The Serial Individual.
(a) Singly	The Simple Serial Individual.
(b) in simultaneous succession	The Compound Serial Individual.
B. That coexist, constituting	The Coexistent Individual.
(a) and are continuous	The Simple Individual.
(b) and are discontinuous	The Compound Individual.
(*a*) and alike	The Aggregate Individual.
(*b*) and are unlike one another	The Corporate Individual.

II. B. The Unique Individual.

Unique individuals are, as we have seen, of two kinds. The first of these kinds consists of individuals that, though insusceptible of plurality and of degree, are yet susceptible of amount. These I call Substantial Individuals, in harmony with the existing and prevalent practice of calling them, or some of them, substances, a title not given to any individual of another class. Thus gold is called a substance, water is called a substance, bread, meat, lime, granite, wood, and so forth, are called substances. The term is usually limited, it is true, to material substances, and we do not usually call Law, or Commerce, or Diplomacy, or Civilisation a substance; but we have already found, as is found in every science, that the terminology of everyday life needs some modification to adapt it to the necessities of science.

1. Experience.—Substantial individuals are met with in experience in samples. We never meet with them as wholes, nor do we ever contemplate them as wholes composed of parts, and as a specimen individual must be a whole, we never encounter them in specimens. We contemplate them as substances encountered in samples. No one has ever seen the whole of gold or of bread, and even to speak of the whole of gold or of bread is manifestly a misnomer. We can indeed

speak of the whole of the gold in the Bank of England, but then we might, if we had opportunity, have actual experience of the whole of this amount of gold, but this is very different from the whole of gold. What we should see, and what we speak of is the whole of an amount, not the whole of a substance. Neither is a substantial individual susceptible of number, or of numerical computation. There are no golds, no breads, no limes, no granites. We may indeed speak of waters, meats, and woods, but when we do so we are using elliptical expressions. We mean kinds of water, kinds of woods, and kinds, or perhaps amounts, of meat. Substances are encountered in samples, and we always assume that every sample is, for the purpose in hand, of the same composition as every other sample. Different kinds of water are, it is true, said to be of different composition, but it is not the water that varies, it is the substances dissolved in the water. Nitrogen was always regarded as a substance, and therefore of uniform composition. As soon as it was found that this is not the case, but that the nitrogen of the air differs from the nitrogen formed in the laboratory, the nitrogen of the air was regarded, not as one substance, but as a mixture of two substances.

2. MEASUREMENT.—Substantial individuals are measured by amount. They are not measured by size, and cannot be large or small. They are not measured by comprehensiveness. They are not measured by number. They are measured by amount. There may be much gold, or water, or bread, or lime, or there may be little; and the amount may be measured by weight or by volume, but then what is weighed or measured is not the substance, but the amount of thesu bstance.

3. KINDS.—It will have been seen by the instances adduced that there are many kinds of substance, or rather, of substantial individuals, and like other things they may be divided in various ways. The only division that is important in the present connexion is into corporeal and incorporeal substances. The difference between them will be readily appreciated from the examples already adduced. Gold, water, bread, and salt are corporeal substantial individuals. Law, commerce, trade, superstition, are incorporeal substantial individuals.

II. B. 2. THE QUALITATIVE INDIVIDUAL.

The name of this kind of individual also is descriptive. A qualitative individual is a thing that when viewed with respect to its external relations is found to be unique, and when examined with respect to its measurability is found to be susceptible of measurement, not by amount, but by degree. Such individuals are commonly called Qualities.

1. Experience.—Qualitative individuals are encountered in experience not, like numerical individuals, in specimens; not, like substantial individuals, in samples; but in instances, and always as attributes. Attributes can be mentally abstracted from the substances in which they inhere, but the separation is always an imaginary one. It is never encountered in experience, and does not exist in experience. In experience a quality is always encountered as inhering in some substance as an attribute of that substance.

2. Measurement, and 3. Kinds.—These must be taken together, for the different kinds of qualities depend on the different modes of measurement of which they are severally susceptible.

In the first place a quality may be contemplated as inherent in a substance, and is then an Attributive quality, and is expressed by an adjective, as white is an attribute of snow and chalk. Or the quality may be contemplated apart from the substances in which it is inherent, and then becomes an Abstract quality, and is expressed in a different manner, by a word of different kind, such as "whiteness," a substantive noun.

All qualities are susceptible of measurement by degree, but the degrees by which different qualities are measured are different, and qualities are divisible into kinds or classes according to the kind of degree that measures them.

First, there are degrees of intensity, applicable only to the first class of qualities, which may on that account be called Intensible qualities. Such are hardness, weight, beauty, goodness, size, and so forth, each of which may exist in any degree of intensity.

Many kinds of qualities are not susceptible of degrees of intensity. There are, for instance, no degrees of completeness, fullness, perfection, straightness, purity, continuity, or circularity. Any of these qualities, if present at all, is present in full, and if it falls short by the shadow of a shade, is in truth absent altogether. These may therefore be called Unintensible qualities, since they are insusceptible of degrees of intensity. But though they are not susceptible of degrees of intensity, they are susceptible of degrees of other kinds, and are divisible into kinds according to the kinds of degree by which they can be measured.

The first kind of unintensive degree is degree of approximation or departure. A thing cannot be intensely perfect, or very full, or moderately pure, or rather complete, or straight, or circular, or continuous; but it can be nearly or far from having any of these qualities. A thing must be perfect or imperfect, complete or incomplete, pure or impure, and so on, and there is no middle state or degree between the presence and the absence of the quality, between its full and complete possession and its utter absence; but there may be any degree of approach to perfection or completeness, or fullness, or purity, and any degree of departure from these qualities. Such qualities may therefore be called Approachable or Departible or Desertible qualities.

Lastly, there is a third class of qualities that do not admit of degrees either of intensity or of approximation. Such qualities as moving, or metallic, or suspended, are, like approachable qualities, either present in full, or absent altogether. There is no middle state, and therefore no degree of intensity. But, unlike approachable qualities, these qualities do not admit of degree even of approach or departure. A thing can no more be nearly moving or far from moving, nearly metallic or far from metallic, than it can be very or rather or intensely moving or metallic. But although they do not admit of degree either of intensity or of departure, they do admit of another kind of degree. They admit of degree of apportionment. Though a thing cannot be either very metallic or suspended, or nearly metallic or suspended, it can be partly or wholly metallic or suspended; and since they are susceptible of degrees of apportionment, qualities of the third class may be called Apportionable qualities.

Of Intensible qualities there are two very distinct kinds, in one of which the quality begins at a zero point, and from this point extends in gradually increasing intensity without assignable limit. Luminous, for instance, begins at the zero point of dark, noisy at the zero point of silent, dirty at the zero point of clean, flexible at the zero point of rigid; and from this point they are susceptible of gradually increasing intensity of luminosity, noisiness, dirtiness, and flexibility without assignable limit, there being no point at which we can say that a thing is completely luminous, or noisy, or dirty, or flexible, and the zero point being a sheer barrier, and admitting of no degrees in the minus direction. These we may call Singly Unlimited Intensible qualities.

The second kind of Intensible qualities also has a zero point, but the zero point is not impassable. We can proceed beyond it in a minus direction to an indefinite extent. Goodness, hardness, beauty, ease, cleverness, all begin at a zero point, and are susceptible of increase of intensity without limit. But the zero point is better called a neutral point, for from this neutral point we can proceed to an indefinite extent backwards, or in a negative direction, in increasing degrees of badness, softness, ugliness, difficulty, and stupidity. These, therefore, may be called Doubly Unlimited Intensible qualities.

Qualities of the Approachable or Departible class again admit of division. For some of them, the degree of departure from the quality is without assignable limit. It can never be said that a thing is completely imperfect, or impure, or crooked. However far we may depart from the quality, a farther departure is conceivable. These, therefore, that are limited in but one direction, may be called Singly Limited Approachable, or rather, Departible qualities.

There are other qualities of the Approachable class from which the departure is not without limit. As we depart from the limit of completeness in one direction, so we approach a limit of negative completeness in the other direction, and when this limit is reached, departure is at an end. We can go no farther. We may depart from perfection to any extent, and our departure is without limit; but as we depart more and more from fullness we approach nearer and nearer to emptiness, and when emptiness is reached our progress is arrested. We can go no farther. We have reached a limit. So, a thing may be quite transparent or nearly or far from transparent; but as we depart from transparency we approach opacity, and when opacity is reached, we can go no farther from transparency. We are brought up with a round turn, and if we move at all, we must retrace our steps. These qualities, therefore, may be called Doubly Limited Departible or Approachable qualities.

Lastly, there is a class of qualities that do not admit of degrees either of intensity or of approximation and departure. Like approachable qualities, such qualities as moving or metallic, or suspended, are either present in full or absent altogether. There is no middle state, and therefore they are insusceptible of degrees of intensity. But unlike approachable qualities, these qualities do not admit of degrees even of approach and departure. A thing can no more be nearly moving or far from moving, nearly metallic or far from metallic, nearly suspended or far from suspended, than it can have these qualities intensely or moderately or slightly. Of such degrees the qualities of the third class are insusceptible: nevertheless they are not wholly insusceptible of degree. They are susceptible of degree of apportionment. Though a thing cannot be either very metallic or nearly or far from metallic, it can be partly or wholly metallic. Though it cannot be intensely moving or far from moving, it can be moving in part or as a whole. Though it cannot be rather suspended or completely suspended, it may be partly or wholly suspended. Though it can neither be very immersed nor almost immersed, it can be immersed in large part or in small part. Such qualities, since they are susceptible of degrees of apportionment, may be called Apportionable qualities.

We may therefore construct the following table:—

Table III.

Qualities are susceptible of degrees, which may be

I. Degrees of intensity measurable from a zero point.	Intensible Qualities.
A In one direction only.	Singly Unlimited.
B. In both plus and minus directions.	Doubly Unlimited.
II. Degrees of approximation or departure.	Approachable Qualities.
A. The departure may be without limit.	Singly Limited.
B. or to a fixed limit.	Doubly Limited.
III. Degrees of apportionment.	Apportionable Qualities.

III.—VOLITIONAL ATTENTION AND ITS TRAINING.

By C. W. Valentine.

In recent years educationists have been very much concerned with the doctrine of "formal training". The old view of the faculty psychology—that such a faculty as observation (or memory or judgment, etc.) can receive a *general* training by *any* kind of exercise of that faculty—has fallen into disrepute. Few educational psychologists would maintain, for example, that a boy's practice in the observation of flowers will necessarily improve his observation of Latin endings, or *vice versa.* There is experimental evidence that a training in accuracy in certain kinds of work in arithmetic need not result in any improvement in accuracy in other kinds of arithmetical problems, and that the improvement, by training, of neatness in the written work in one school subject, may have no effect on the written work in other subjects.

Unfortunately, however, there has been a tendency in some quarters to group all the various mental functions together in this respect, and to assume that, because experiments tend to show that the memory in general cannot be improved by a specific training or only to a relatively slight degree, therefore attention and reasoning and all mental functions are in a like case.

It seems to me that more careful psychological analysis of individual capacities and functions is necessary before we can pronounce upon some of these questions or upon the general question of formal training. At the same time it would be well if the question were approached from the other end, and if individual school subjects like Latin or geometry were selected and the mental processes involved in their study analysed, so that we may find what mental functions are likely to be developed by those subjects.

In this paper I have selected volitional attention and the training of attention for special treatment. A full discussion of the question of formal training would require detailed treatment of all the other individual functions, faculties or aspects of mental activity.

The practical importance of such a topic as that of this paper is easily shown. If, for example, there is no general training of attention, then the arguments in favour of the teaching of Classics to the average schoolboy (merely for a few years) are appreciably weakened. The fact that, in proportion to the amount of time occupied by such studies he gets little from the content, is widely admitted. As regards facts and ideas he could certainly get more by devoting the same amount of time to Greek and Roman history and literature in good translations. But it is urged by some that the very difficulty and "dryness" of the study of the languages form a valuable mental training, for it demands mental effort and concentration of attention. The same argument is applied in reference to other subjects, especially mathematics; and in general it was used to defend the teaching of any school subjects by those methods in which the pupil was left to struggle largely unaided with the difficulties of the subject, or at least in which the arrangement of the subject matter was insufficiently accommodated to the various stages of growth of the child mind, and more especially in which little or no attempt was made to appeal to the interests of the child.

Now it would, I think, be generally agreed that the old pedagogy erred in ignoring or minimising the fact that there may be mental activity of an intense degree where interest—immediate interest in the work itself—is at its highest, and indeed that the most valuable and profitable work is done under these circumstances, when mental effort is expended solely in dealing with the inherent difficulties of the subject itself, and not wasted in keeping the mind from wandering to other and more attractive topics. Great constructions of thought, systems of philosophy, scientific discoveries and inventions have come about, not through the painful repetition of volitions to attend to the uninteresting though such may at times have been necessary, but through intense interest in the subject matter dealt with, which made prolonged avoidance of the wandering of attention comparatively easy. "Geniuses," wrote William James,[1] "are commonly believed to excel other men in their power of sustained attention. In most of them it is to be feared that the so-called power is of the passive sort. Their ideas coruscate, every subject branches infinitely before their fertile minds, and so for hours they may be rapt. But it is their genius making them attentive, not their attention making geniuses of them, and when we come down to the root of the matter, we see that they differ from ordinary men less in the character of their attention than in the nature of the objects upon which it is successively bestowed."

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[1] *Principles of Psychology*, vol. i., p. 423.

It seems then that there is much to be said for modern pedagogy in its insistence upon the development of real interests as opposed to the more formal training of the "faculty" of attending in the sense of the capacity to hold our attention to the uninteresting. Few, however, even of these modernists, would dispute that there are times when such efforts of volitional attention are desirable, and that if it is possible to give something by way of a general training of the capacity to control attention, then it is desirable to include opportunities for such training in school work. And the importance of such opportunities would be greater than is at present admitted by those who maintain that, even if volitional attention can be developed by practice, we only increase the power of attention *to the special subjects in which the attention is practised*. Strictly speaking, of course this latter would not necessarily be increasing the power of volitional attention at all. It would rather be developing special interests so that volitional attention becomes unnecessary or less necessary when we are concerned with these particular subjects. The genuine problem of the formal training of attention is this—can we by exercising volitional attention to A increase our capacity of volitional attention to Y and Z, independently of any connexion of interest between Y and A or between Z and A.

The purpose of this paper is to show reasons for believing that this transference of training is *possible*, and how exactly it may take place, but also to show the conditions that appear to be necessary for such a general training—conditions which have been too often ignored.

To answer the question "Is there such a thing as volitional attention" we need first a careful inquiry as to the nature of volitional attention, and I wish to start with Titchener's theory of volitional attention—partly because, if true, it would give *prima facie* little hope of the possibility of general training of attention, and partly because it affords a convenient way of approach to what seems to me a truer account of volitional attention.

I. IS THERE SUCH A THING AS VOLITIONAL ATTENTION?

Titchener's theory is, briefly, that there is no such thing as volitional attention as ordinarily understood. He calls it "secondary attention" and maintains that it is not really active in the sense which implies spontaneous mental activity. "It is simply the resultant of a conflict of primary attentions. There are rival claimants for the chief place in consciousness, and the standing room is limited. So the attention, as we say, is divided; or perhaps it oscillates between the various impressions presented. Secondary attention is attention under difficulties, attention in face of competitors, attention with distraction. But that is its whole secret; it has no novel feature."[1]

I shall try to show, first, that Titchener's theory is inadequate, and later, that the view of attention to which we are led even when following up some of Titchener's own admissions, does not exclude the possibility of a general training of what most psychologists call voluntary attention.

Titchener's theory seems to me inadequate in the following respects:—[2]

While it is true that in volitional attention there is often a conflict for our attention between two sources of interest, this is not an essential characteristic, and certainly it is not always a prominent element in the situation. Frequently, no doubt, I find it hard to attend to (*a*) because of the attractiveness of (*b*). But on the other hand it often seems that it is hard to attend to (*a*) simply because of its own lack of interest rather than because of the competition of a keener interest. If a student is working at a subject for the sake of an examination, it is often the inherent dullness of his book which causes attention to lapse, a kind of aversion is set up, and *then* some other thing or topic takes its place, sometimes quite a trivial object such as the colour of his blotting-paper, or the idea of making sketches on the margin of his book. Introspectively it seems more accurate to say that these things come to fill a momentary blank in the mind, rather than that they conflict with the book as objects of interest.

No doubt the motive to attend to the text-book may consist of an idea of success in the examination which attracts and holds primary attention; this is the first stage in the process of volitional attention, and thus far Titchener's account is free from objection.

The next stage, however, is not necessarily a conflicting attraction, but rather the thought of the *means* (*a*)—uninteresting perhaps in itself—to attain the end A. Now the means (a) gains some interest through its connexion with A; it becomes actually part of the total desired end, because a necessary means to the desired end. Intrinsically the greater interest attaches to A, yet *there is a turning from* A *to the intrinsically less attractive* (a), and herein is the very essence of volitional attention. *The mind turns from* A *because of* A *and for the sake of attaining* A, and there are cases in which the conflict is rather between (a) the means and A the attractive end rather than between (a) and some other attractive object (b), unconnected with A.

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[1] *Text-book of Psychology*, vol. i., p. 272.

[2] **A full treatment of Titchener's views on attention would require a discussion of his position in reference to conation; but I think that for our present purpose this may be passed over.**

For the purposes of efficient work it is not satisfactory unless the motive or purpose idea A drops into the background, and the inherently uninteresting, or comparatively uninteresting means (a) completely fills the field of consciousness. This can only be [in view of the possible competition of more interesting competitors (b) and (c)] (1) because in some way interest dependent on A attaches to (a),—is transferred as it were, and so (a) becomes more interesting than A; direct association may explain the fact that (a) gains some of A's interest: but we require more here: (a) must be felt as, *for the immediate present, more important than* A. Or (2) the transference may take place because the previous volitional state, having A as its object, in some subconscious manner continues to draw the attention to (a) in spite of a's lack of interest, and to inhibit the division of attention to the rivals (b) and (c).

Explanation (1) seems to account for cases in which an altogether exceptional and contingent interest seems to attach to an object, simply because it is serving a special purpose, as for example when we study a usually dull French Grammar and find it interesting because recent conversation with foreigners has revived the desire to master the language. But as far as introspection serves me, the former explanation (1) is not always sufficient. It certainly seems that there are times when the thought of and wish for A is continuing to exercise its influence even when it has disappeared from consciousness and yet without making (a) really interesting. Otherwise I cannot explain cases in which I continue to attend to what seems of very little interest, even without (for the time at least) referring back to the reasons for attending to it. Now we may admit to Titchener that there may be at first simply strong *primary* attention to A. But when the attention to (a) becomes stronger because of the very strength of A's attraction followed (1) by the realisation that (a) is the means to A, that A must be inhibited and (a)

attended to; and (2) by the willing to attend to (*a*), surely we have a total situation which is of a special kind among attention processes and justifying a special name; and most certainly we have something other than that mere conflict of two primary attentions which Titchener calls secondary attention, and which is for him the only type of attention other than the simple primary attention.

The point is that here we have a decided case in which, not only is our state of mind determined by the preceding state, but it is determined by a state which includes a resolution to determine its second state.[1]

Sometimes the *idea of attending* as such occurs to us and is interesting because it suggests a means of attaining A or of asserting ourselves, or "proving our will-power". So we attend to the idea of attending (I purposely follow as closely to Titchener's view as possible). There follows the approval of this idea—as we say, we will attend to (*a*).

What Titchener's view fails to account for is the great influence of this particular process upon subsequent attention. If voluntary attention is merely the result of two conflicting primary attentions, why does this (at least apparent) "will-to-attend" exert such an influence? It is no longer a mere competition of (*a*) and (*b*); for (*a*) has now greatly increased chances. It seems to be backed by a vaster portion of the self than is involved in the mere interest in (*a*) or (*b*) or even in A. Further, there is, as has been maintained, the continuation of the influence of the prior state interest in *A* and willing of *A* even when the succeeding state [attention to (*a*)] has taken its place, and this continues at least for a time. And in so far as the attention to (*a*) is dependent on this prior resolution and not merely upon the immediate interest which may develop in (*a*), there is surely something we may legitimately call volitional attention.

That there really is a continuance of influence of the prior state Titchener himself admits, on the following pages of the same volume (pp. 272 and 274), though he speaks of it solely in physiological terms. He supposes the case of a student, when preparing for an examination, disturbed by an alarm of fire in a neighbouring street. "Both ideas, the idea of examination and the idea of fire, are imperative; there is a conflict. The cortex is set in one part for work; and this setting is reinforced by a large number of associated excitations—the nervous processes corresponding to ideas of the examination mark, the consequences of failure, and so on. The cortex is set in another part for going to the fire: and this setting is similarly reinforced by the processes corresponding to a run in the fresh air, an exciting scene, a possible rescue, and so on."

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[1] This more than satisfies at least Stout's requirements for the admission of the term "mental activity". He says, "I am active so far as a prior state of consciousness determines subsequent, passive so far as change is determined by extra-conscious conditions". (*Analytic Psychology*, vol. i., p. 202.) But in our case there is not only determination by the prior state, there is also the idea of the determination of the succeeding state and the acceptance of that idea.

"The side which finally proves to be the stronger, in the struggle of secondary attention, need not necessarily be the stronger. The conflict between working and going to the fire may lead to a victory for work, in spite of the fact that consciousness is more fully occupied by fire-ideas than it is by work-ideas. The nervous system, in virtue of its own bias or leaning, has brought up further reinforcements on the side of work, and these reinforcements have directed or guided consciousness although they themselves are not represented in consciousness. The guiding influence of nervous bias is not a matter of inference, still less a matter of speculation; it can be demonstrated in the physiological laboratory." In reference to a person on whom a psychological experiment in association of ideas is being performed, he says: "A certain tendency impressed upon his nervous system by the experimenter's original explanation, has been effective to direct the course of his ideas long after its conscious correlate has disappeared. And what happens here in the laboratory happens every day of our lives in the wider experience outside the laboratory." Now if such a "nervous bias" can be caused by an experimenter's suggestion, Titchener must surely admit that it may be influenced by a previous strong desire and determination to attend to (*a*). Some such principle of predetermination seems to be still more clearly implied in his paragraph on "Will," vol. ii, p. 468. "The direction of a present consciousness may be predetermined by a suggestion which was itself represented in consciousness." This confession seems to me to be inconsistent with Titchener's fundamental attitude as regards Volitional Attention. And if he stand by the former we need not quarrel with his physiological theory. For the theory that the cortical processes correlated with the determination to attend to (*a*) continue to influence or reinforce the continued attention to (*a*), even when they themselves are no longer accompanied by their characteristic correlated conscious processes, is a physiological theory quite consistent with our view of volitional attention. All we require physiologically is that the cortical processes correlated with the determination to attend to (*a*) should be of influence in determining the process correlated with the subsequent attention to (*a*). We maintain that it is of very special influence, but any influence would be adequate to make a distinguishing characteristic of volitional attention.

Considering the mental side too, we could then say that a psychophysical disposition, dependent for its strength first upon the interest of the end *A*, and then upon *A* backed by volition to attend to the means (*a*), continues to determine attention to (*a*).[1]

II. The Training of Volitional Attention.

With this preliminary discussion as to the reality and nature of volitional attention, let us turn to the question of the possibility of training volitional attention.

(1) No one, I suppose, would doubt that, if A and (*a*) stand for specific processes or ideas, repetition of the process of "reinforcing" or determining (*a*) by A will increase the facility of this process of "reinforcement" and tend to fix it as a habit. As Titchener himself says, in reference to the contest between the desire to study for the examination and the desire to go to the fire, "If experiences of the sort are often repeated, so that a habit is set up,—a habit of work or a habit of play,—then the struggle is brief, and secondary attention is quickly replaced by primary".

But the important pedagogical question about which there would not be such agreement is this: does practice in volitional attention, on whatever kind of material it is exercised, result in an improvement of a *general* power of volitional attention to anything and everything. Will the boy who forces his attention to Latin verbs be thereby improving his power of attention to any and every uninteresting thing he may have to deal with in an office?

From Titchener's point of view it may at first appear difficult to see how the "energising of the cortical processes" concerned with the present study, by the processes connected with ideas-of-examination-marks, could strengthen the tendency for the processes determining the idea-of-an employer's-approval to energise the processes corresponding to attention-to-a-ledger. But even this might be the case if the processes corresponding to a general idea of duty were exercised in the former case (study), and became active again in the latter case, reinforcing the attention-to-ledger process, and thus supporting the idea-of-the-employer's-approval process.

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[1] It may be noticed that I have not referred to sensory adjustment as an aid in attending, although much is made of this by some psychologists. The putting of the sense-organs in favourable positions helps of course in the case of attention to an external object. But this does not carry us far. We may gaze at a book, with our thoughts far away, and when we want to attend to an idea, control of the sense-organs can help almost solely through inhibiting any tendency to attend to external objects.

Yet even this would not be a *general* power of volitional attention ; only an increase of that capacity when backed by the idea of duty.[1]

Now the possibility of the cultivation of a general power of attention is often assumed by popular writers on Education. The old faculty psychologists also would have approved the idea, while some of the newer educational psychologists would say, " No, interests are specific and so are attention processes ; we may learn by practice to attend to X without this having any improving effect upon our power of attending to Y ". Indeed there is experimental evidence (and that hardly needed) that practice in attention to X may spoil our attention to Y by setting up conflicting interests.

I wish to submit that, while the second mode of development, *i.e.*, that of specific interests and habits of attending is for the average child much the more important in actual learning and training, there is still a certain amount of truth in the doctrine that a general training of attention is possible.

(2) Let us consider the matter, and this time more from a psychological point of view. If capacity for concentrated attention in general is desired, the *will* to attend to what at first sight is uninteresting seems to be one thing at least which we can develop. This can be done if and when a child proves from experience that such volitional attention brings its recompense, either the reward of further interest in the subject, or a reward external to the subject itself. As a result the child will be more willing thenceforth to give heed to the suggestions of a future gain. We may suppose that the idea of the future gain, or that aspect of it which is common to all ideas of future gains, will be strengthened by the stored-up impressions of past gains which have followed the efforts of voluntary attention. In this way that will to determine attention, which is the characteristic of volitional attention, is strengthened as a result of successful experience in the past.

This kind of training of attention has a distinctly moral aspect. For such development as the result of training would be an important element in the development of volitional and deliberate, as opposed to impulsive action, and also in the pursuance of an ideal under great difficulties. Once mental effort has brought its reward it is undertaken afresh more cheerfully.

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[1] A general idea of expediency might conceivably, together with a general idea of duty, cover all possible cases.

> "With aching hands and bleeding feet
> We toil and heap, lay stone on stone.
> We bear the burden and the heat
> Of the long day, and wish 'twere done.
> Not till the hours of light return
> All we have built do we discern."

But once we have discerned this, how much more readily do we undertake the next day's labour, if we see that it has been worth while.

Must we then necessarily suppose that volitional attention is a general faculty which on being exercised in any one way is inevitably strengthened for future use; and that it is not a question of the things to which we are attending?

It depends, I think, on the extent to which we generalise on the basis of our particular acts of attention; not necessarily explicitly in words: we may form something like a practical generalisation as we suppose animals do. By "generalise" here I mean realise that mental effort in volitional attention has its reward. In so far as this is realised such generalisation may have its effect on all future occasions when volitional attention is called for. And one at least of its effects may be a lessening of aversion from things *prima facie* uninteresting. They take on, if not a tinge of pleasantness and associated interest, at least a less extreme shade of unpleasantness or boredom. For we realise more vividly now that they are possible means to valuable ends.

Our work may even become self-conscious to a further degree, and we may learn by experience to follow the method of attending to reasons why we should work. But we need not contend that a conscious thought of the success of past efforts is an essential of attention. It would seem possible that the mental activity of turning the attention to an uninteresting thing is, by such *successful* experiences, reinforced, or "stamped in," in a way analogous to that in which a movement is supposed to be stamped in by the success which follows it, when learning is proceeding by the "method of trial and error".

In so far as this happens, the act of turning the attention to uninteresting things may become easier on future occasions; it may indeed come to be a species of habit, when the value of some remote interest is realised—a regular kind of reaction to the general situation "uninteresting-means-to-desirable-end".

It may possibly be suggested that the mere mental act of turning the attention from A (the desired end) to *a* (the means) for the sake of A, may facilitate this process in the future, even if it prove *unsuccessful.* But it seems to me that this is unlikely. In so far as there is an analogy with the more or less subconscious workings of the "method of trial and error," we should expect that only success (and repeated successes) would develop the mental processes concerned. And in so far as fully conscious processes are concerned, it is surely to be expected that repeated *failures* of volitional attention to attain a desired end or to develop an intrinsic interest in the means, would lead to a greater *aversion* from the effort of volitional attention. There would be a lessened inclination to will to attend.

The reply may be made that no *general* weakening of volitional attention need result from such failures—only an increased aversion from these means in particular. But this argument, while a permissible one to the opponents of all general training of attention, would hardly come well from those who support the general training of attention. They can hardly maintain that there is a general, positive, favourable training of attention, but only particular negative results, that is, only particular spoiling of attention for the specific objects concerned in such failures.

(3) Perhaps then we may conclude that the only way in which it seems possible that volitional attention can be cultivated, is through successful acts of volitional attention bringing satisfaction and thus resulting in a general change in the attitude towards things inherently uninteresting but which are seen to be the means to a desirable end.

If this be the only way of developing volitional attention, then the error of the old pedagogy lay in supposing that *all* drudgery gave a mental training and that all acts of attention trained the power of volitional attention. But as we have seen there is no indication that the effort to attend to an uninteresting subject will improve the power of volitional attention except in so far as the efforts lead to success, the attainment of ends really desired, or at least to the development of new interests in the means itself.

If when "the hours of light return" we fail to see anything of value accomplished, there is no encouragement for future efforts. We adults and even some children may be far-sighted, and able to "catch the far-off interest of tears," but we cannot expect that of the average child. The tragedy of much education is that the children never do see that their drudgery has been worth while. No doubt it often needs time to arouse interest in a given subject, and occasional pressure now may result in interest and spontaneous work later. The mistake, however, of some teachers and of some schemes of education is to be content with "much later" or "never". Further, we do not want to prepare attention to be an abstract power to work *in vacuo;* we want above all, not only that our pupils should be able speedily to find interest in any work which has been done, for the sake of the end in view, but especially that they should have such a rich store of ideas and developed interests that any work is likely to find ready a closely connected interest and so be able to grow an interest for itself. We want this, and not merely the capacity to force attention in general, because the necessity for a constant, deliberate act of volitional attention involves a liability to, and indeed the certainty of, loss of efficiency, and of increase of mental fatigue. The best work is done when attention is equivalent to absorption—when energy is expended in and effort directed to the solution of difficulties in the subject itself and not primarily in the holding of attention to the uninteresting.

(4) Yet these are not the sole aspects of improvement in mental work. With such a general development of attention as we have seen to be possible, all means which are seen to be means to desired ends will tend to become to some extent more interesting; that is, the necessity for volitional attention will become less in general, apart from the development of specific interests.

The relative importance of the two modes of developing attention (*viz.* (i) the development of capacity for volitional attention in general, or (ii) the development of specific interests or habits of attention) is a difficult question. But one or two considerations may be offered on the point.

In the first place, we must surely expect here great individual variations. Let us consider a concrete case. Some youths are studying Latin for the sake of an examinational success, which is important for their future welfare. Latin is, we will suppose, not inherently interesting in itself to youth X. The knowledge of Latin as a whole is dependent, for its interest, largely [1] at least, upon the desirability of success in the examination, which in its turn we may suppose is interesting simply because of its connexion with success in life. The knowledge of any particular part of Latin is still more remotely connected with success in life. The parts of the verb *fero*, *tuli*, *latum* are not even directly connected with success in the examination, though if the student discovered that those forms would be asked for in the examination, how excitingly interesting they would become.

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[1] I say "largely" because it is scarcely likely that Latin would be *entirely* without inherent interest, at least after a short time of study. But experienced teachers will agree that it sometimes seems to approximate to this in not a few cases. Of course there are enormous individual variations in the extent to which the mere intellectual activity involved in

As it is, the series of links is somewhat as follows :—

A	B	C	D
Success in life.	Success in Examination.	Knowledge of Latin as a whole.	*Fero, tuli, latum.*
Supremely interesting.	Very interesting, because so closely associated with A.	With less firmly attached interest.	Interest still slighter, as this is but a part of C and may prove unessential for B.

Now few would doubt that some youths are better able than others to attach, so to speak, the interest of A to B, and that of B to C. Others realise in a cold intellectual way that C is an essential means for A, and yet remain unable to develop an independent interest in C. No doubt such differences are usually due to the fact that there is little or nothing in the Latin which inherently appeals to the youth, even when he has studied it some time. But if, as we argued above, there is also in fact a possibility of a continuous transference of interest, it seems reasonable to attribute some of the variations among individuals (in respect to the power of volitional attention) to variations of this particular capacity to "transfer" interest. This is the aspect of volitional attention which, in the supposed case above, is probably dependent on a sub-conscious influence of A and B for the attention to C and D. This capacity to find the remote means interesting because of the end, is probably closely correlated with "general intelligence," in which the capacity to hold an idea in the extreme margin of consciousness, and yet in readiness for use, and even to let it influence the ideas at the focus of attention, seems to be often an important element. Thus it may well be that the more intelligent are both originally more capable of this transferring of interest involved in volitional attention, and also (and because

learning Latin proves interesting. These for the sake of the present argument we may ignore.

of that) improve that capacity even relatively more than do the dull. For this capacity when present to a high degree brings its rich reward and thus still further increases its own powers. It is emphatically a case of "To him that hath shall be given"; and further, "from him that hath not shall be taken away even that which he hath," for the pupil originally weak in this capacity to "transfer interest" may actually be made worse by undue strain upon it, leading to failure and disappointment. All this accords well with the testimony of distinguished classical scholars and head masters that the teaching of classics, at least on the old lines, to average or dull boys not only shows little result as regards value in classical scholarship, but may lead to an indifference to, and even to a disgust with, learning in general. Attention has been forced to the inherently uninteresting, and in the case of these pupils no transference of interest has taken place, nor have they the aptitude required for the development of a keen interest in the language themselves.

Thus we have additional reason for testing our pupils well before deciding that they shall go on this or that "side" of the school. A strong case has already been made out by the teachers of foreign languages for the beginning of only one language at a time and the concentration upon it for, say, two years. From our present point of view this would be welcome because we should also thus be able to see whether the boy was likely to take to languages at all (whether he had either a high native linguistic capacity, or a strong capacity to "transfer" interest), before attempting to force one or two other languages upon him.

It is, then, only with the more intelligent pupils that we should expect much in the way of a general improvement of the power of volitional attention as a result of training with a specific subject. This fits in with the fact that it is a characteristic of high intelligence to see relationships (*e.g.*, to realise the unity of means and end) which are not noticed by the less intelligent. I suspect that a similar thing would be found to be true in the case of other mental capacities, namely, that a specific training has a general effect only in the case of the more intelligent persons. It is regrettable that the experimentalists in dealing with the question of formal training have overlooked this important point of individual variation. It may be that when a slight, almost negligible transference of training effect is shown by a large group of persons, analysis would reveal that a few of the most intelligent have shown considerable transference of improvement as a result of the specialised training, but that the rest of the persons have shown none at all, thus giving a negligible result on the average.

(5) In conclusion, our general argument in favour of there being something in the nature of a general improvement of volitional attention is surely no reason for prescribing, even for the brightest pupils, any subject in school for the sake merely, or even chiefly, of any such training of attention. For whatever subject a boy studies he is sure to meet facts and methods of inherently little interest, which must be attended to for the sake of the whole. An absorbing one-sided interest in a single subject may leave a boy's mind untrained in this respect if he does nothing else. But so long as he pursues a variety of studies, this is not likely to happen; and if he has a great variety of interests, the less important becomes any such general training of volitional attention, for it will *pari passu* be the less frequently needed.

For the dull, and possibly for the average pupil, any attempt to give such a general training of attention through a subject which fails to appeal to the student is probably useless and it may be positively harmful. At the same time such a limited possibility of a general training of volitional attention as has been indicated, would account for the fact that the best boys and students do seem to be able to develop a capacity for concentration of attention on the difficult and uninteresting points in almost any subject, as the result of specialised training in only one or two special selected subjects; but it must be remembered that such specialisation rarely takes place before later boyhood by which time the seeds of "many-sided interests" have probably already been laid.

IV.—THE RELATION BETWEEN ART AND SCIENCE.

By P. J. Hughesdon.

The estrangement of artists and scientists appears to have been a feature of ancient civilisation even before the time of Plato, who by his censure of the poets and by his theory of art (that is the fine arts, in which sense the term "art" will here be used throughout) as consisting in mere imitation "thrice removed from the truth" must have caused fresh bitterness. And in modern times, if there has been less recrimination, yet the opinion is very widely prevalent that art and science are in some sense mutually antagonistic, while among persons who would repudiate such an opinion there seems to be little feeling of any need to establish their essential harmony or even to determine their proper co-ordination. It is of course true that in what, for want of a more satisfactory term, we may call the ideational, as contrasted with the practical sphere, art and science represent alternative and so far mutually exclusive aspects of reality, and habitual occupation with either aspect may impair the mind's capacity for appreciating the other. Yet the aspects with which they are respectively concerned are, the writer would suggest, primarily and normally parallel, or rather correspondent, and complementary. This thesis it is now intended to develop and defend. At a time when education reform on a great scale is being called for and yet is still debated on the basis of the ludicrously inadequate and in part false antithesis of the classics versus science (the latter usually understood in the old and bad but, it would seem, not yet discredited sense in which all knowledge of mind and society is excluded), the present question has considerable immediate importance, since, whatever adaptation to tradition, practical requirement, etc., may be advisable, a satisfactory scheme of education must at least start from a correct view of the relation between the various aspects of truth or spheres of knowledge.

It will be best to deal at the outset with the causes through which the true relations of art and science have to a great extent been obscured. But first the defectiveness of the correspondence must be admitted. Such defectiveness may be noted in three points, first the large gaps, the frequent failure in the correspondence itself—this is a point which will have to be considered later at some length together with the subsidiary question how far failure is essential, how far a temporary and waning cultural feature; secondly, the concrete quality of artistic modes of presentment, which excludes anything like a precise delimitation and classification into sociological art, psychological art, etc.; thirdly, the fact that for most purposes the arts can be distinguished more satisfactorily according to the medium used.

But to these real differences must be added others that are mainly or wholly apparent, that arise from faulty or inadequate conceptions either of art or of science. First, there has been no sufficient recognition in the sphere of art of any distinction answering to the distinction in the sphere of science between relative science and metaphysics. In art of course the dividing line is less clear; yet unless we are prepared to affirm that art never deals with fundamental truths, that for instance the themes handled in the greater tragedies of Shakespeare are essentially of a lower order than the great problems of speculative thought, or, on the other hand, that art always deals with such truths, a position that would involve quite as great absurdities, we must admit that art too, like science, is concerned with reality on both planes of interpretation.

A second source of error has been the disposition to restrict the name "science" to branches of knowledge founded mainly upon the observation of phenomena (in the strict sense of that term), in respect of which knowledge the parallelism with art is least apparent and, from causes to be noted later, to a great extent breaks down. This defective conception of science has arisen not so much perhaps from the less rapid advance of the sciences of mind as from the grouping of these and especially of psychology with metaphysics and epistemology under the designation "philosophy"—an arrangement, it is true, quite justified as regards certain aspects of knowledge—and the consequent exclusion of such sciences from the scientific series.

Next, a considerable influence must be attributed to the, as it seems to the writer, unfortunate identification of the content of art with the beautiful. It is true that by theoretical writers the word "beautiful" is largely so used as to cover all artistic work, whether beautiful in the ordinary meaning or not, though the unfitness of the word to carry the meaning thus attached to it has led to the suggestion of various alternatives, the "significant," the "characteristic," etc. Here however we are concerned rather with general than with expert notions, and a usage that in the latter case is merely awkward in the former is the fruit of a palpable error. It might no doubt be contended that the representation in art of much that could not be called beautiful in the ordinary sense does not disprove the view that all art is beautiful, even in that sense; the work of art, so the argument—up to a certain point quite valid—might run, that for instance shows us the ugly as ugly is as really beautiful as the work of science that shows us the erroneous as erroneous is truthful. To make good the conclusion however it would be necessary to prove that in all artistic work there was an implied reference to beauty as the standard, and such a position could not be maintained for a moment in respect of great works of art. The essential excellence of art really consists in the presentation or re-presentation (or merely suggestion), quintessential and appraising and always in some sense concrete, of truth, of the nature of reality. There is certainly in art a further distinguishable element, that namely of formal excellence. Whether formal excellence should be viewed as merely subsidiary to the representative element or whether it has also an independent value as representative or suggestive of formal truth in the concrete is a question which must be considered later; in either case much in art that at first sight appears to be formal may well be subtly and figuratively representative of essential truth.[1] As regards the relation between truth and beauty, to accept without qualification the proposition "Beauty is truth, truth beauty," might be to commit oneself to optimistic monism of an extreme kind; it seems more accurate to say that excellence of whatever sort is in its manifestation always beautiful (even the representation in art of what is far from excellent in itself may be beautiful regarded as a manifestation of the artist's insight into its want of excellence), while conversely beauty is always a property of manifested excellence.

Then again the relation to phenomena both of art and of science has been to a great extent misconceived. In his most recent work Mr. Balfour speaks of this matter as follows:—

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[1] This distinction of the formal and the representative elements in art must not be identified with the distinction of style and matter, things that can only be rightly distinguished in much the same way as low and high numbers.

Throughout this discussion the term "expression" is used for the relation of phenomenal medium to content, "representation" for that of art to reality.

"We have a bad habit of saying that science deals with nothing but phenomena. If by phenomena are meant appearances, it is to æsthetics rather than to science that, on the principle of Solomon's judgment, phenomena most properly belong. To get away from appearances, to read the physical fact behind its sensuous effect, would be the total and immediate ruin of beauty both in nature and in the arts which draw on nature for their material."

Apart from the questionable prominence given to the "physical fact," such a statement, if it does not actually incline towards the opposite onesidedness to that which it controverts, is at least wanting in precision. All the arts and not merely those "which draw on nature for their material" are certainly dependent, though in different ways and degrees, upon phenomenal expressiveness or intelligibility, that is, all make use of media consisting of either perceptive (phenomenal) or imaginatively reminiscent phantasms of sight and hearing and in a less degree of reminiscent phantasms of muscular effort, touch, etc., all such phantasms modelled on natural phenomena either directly and imitatively or indirectly with an elaboration and amplification for the most part neither explicitly realised by the artist nor explicitly interpreted by others. But, this being so, it follows that "to read the physical fact" or rather the element of truth, whether merely physical truth or truth of a higher order, "behind the sensuous effect" but without suppression of that effect, seems to be an accurate description of a very great part of æsthetic interpretation and appreciation. Scientific truths again, or rather such of these as have a direct phenomenal reference, are not really dissociated in thought from phenomena, but are both themselves mentally pictured as phenomenally manifested—even a truth so far beyond the reach of sensible experience as radio-activity makes an appeal to the sensuous imagination—and further are regarded not simply as truths but as explanatory truths, are regarded, that is, in relation to their respective "sensuous effects". All which would appear to indicate that, apart from constant reference to the phenomenal world, scientific truth would lose not only most of its interest but perhaps something also of its intelligibility. No doubt the connexion of phenomena, actual or reminiscent, with reality is in a sense closer in art because more particularised; in science, on the other hand, it is more generalised and consequently broader. The question will be taken up again later, but one or two points may be noted here. First, in art phenomena are interpreted, in science they are accounted for (or, to put it at the least, more highly concrete uniformities are resolved into fewer, less highly concrete or ultimately quite abstract uniformities). Next, in the linguistic or "literary" arts, the representation of reality is dependent in a lesser degree upon sensuous expression, whether phenomenal or reminiscent and entirely phantasmic, that is, part of the effect is more clearly in those arts strengthened by, rather than wholly expressed through, the sensuous æsthetic media. Again, in the higher sciences, psychology and sociology, it is not primarily phenomena in the most accurate signification, namely appearances to sense, that are explained, but rather psychical states and dispositions directly and conduct, individual or collective, as motived by these. In the last place, the relation to phenomena differs not only with the respective arts but also in art and science alike according to the grade of reality under consideration, whether mere being or non-living motion or structure or non-conscious or conscious or self-conscious life.

But perhaps the most confusing factor of all has been the view that art is concerned primarily with feeling, science with thought. Here it must be noted at the outset that "feeling" is a somewhat loose term with varying application. In the present connexion it has at least two distinct, though largely confused meanings, first as equivalent to emotion and secondly as signifying intuition of the vaguer, "instinctive" kind, just as the word "to see" is used for clearer and more certain intuitions.[1] The latter meaning, originating in a psychological analogy—one may further compare the use of the word "sense" in "sense of honour," etc., of words like "touch," "tact," "grasp," or again of the French "entendre"—only requires to be indicated and need not detain us. As regards the connexion with the emotions, neither art nor science seems to the writer to have primarily and directly any such connexion at all. Both are concerned primarily with thought and both secondarily with emotion. The truthful presentment of reality is the essence of both, and if this involves an emotional accompaniment or rather consequence, such an effect, however psychologically necessary, is not essential. Thus, to take the case of that art which is most obviously emotional, it seems to the writer that music is the expression not so much of emotional moods as of the attitude of mind behind them. Every emotion or emotional mood of intrinsic æsthetic worth must have a worthy cause in the intelligence, and this, as cause, must be the deeper, the fundamental thing, and therefore the thing that more truly merits and demands expression. The distinction may be made clearer through an illustration. In the case of a voice overheard where the words are either not caught or not understood, the tone may be up to a point quite unmistakably expressive, and we may say, for example, either that it is (emotionally) angry or that it is (intellectually) condemnatory. In such a case, the emotion may of course be primary, as when a bad humour, due perhaps to physiological causes, presupposes to fault-finding; but the reverse is the due order. Secondly, science really agrees with art in having an emotional effect, and differs from it chiefly in the kind of emotion. The emotions to which art appeals—the creator (in science, the discoverer) rather than the recipients of his achievements is here in view—are those that ask to be vented, relieved, that require articulate and objective expression for an urgent but inchoate and formless "inspiration," the fruit usually of an accumulation of intuitive experience in great part unconsciously registered. The emotions to which science appeals are rather those that ask to be satisfied, appeased, the craving to resolve and to understand. Thus it may be said, if the analogy is not pressed too far, that art emotionally is catabolic, a feature which may also be connected with its more obviously productive or creative character, while science emotionally is anabolic and in its analytical and to a yet greater extent in its deliberate experimental methods more obviously receptive; we may further recall here on the one hand the likening of the art-impulse to the play-impulse and on the other the use of expressions like "thirst" and "hunger for knowledge". From the distinctions made follows the further difference that artistic creation is generally a more thrilling experience than scientific investigation, but the results of the latter yield a more constantly present satisfaction. Being thus at once less intense and more habitual, the emotional appeal of science has relatively been overlooked. It is not however intended to assert that this appeal is equally powerful in art and in science. The difference is real, not merely apparent, but it is far less than usually supposed; further, it does not consist in any necessarily and invariably closer connexion of art with æsthetic emotion, but arises chiefly perhaps from the fact that, as will be noted later, art is but poorly fitted for handling the truths investigated by experimental science (and often regarded as the only properly scientific truths); whence art as a whole has been relatively much more concerned than science as a whole with the greater truths, those for instance of human nature, and so at present makes a greater total appeal and probably will always make a greater average appeal to our minds and therefore to our emotions as well. And from the same cause, art much more than science excites emotions that, while natural and human, really are neither artistic nor scientific, though the effect as regards such emotions provides in unæsthetic minds the chief criterion by which artistic worth is judged. We must distinguish too between the emotional accompaniment of artistic or scientific activity and the artistic or scientific treatment of an emotion regarded as a theme or a problem; once more from the same cause such subjects have a relatively greater place in art than in science. Lastly, the fact must not be overlooked that art, owing to its concrete modes of presentation, has a far greater power of awakening emotions (unæsthetic and quasi-æsthetic) through association.

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[1] The two meanings are perhaps confused or combined in the stanza of *In Memoriam* (cxxiv.):—

A warmth within the breast would melt
The freezing reason's colder part,
And like a man in wrath the heart
Stood up and answer'd 'I have felt'.

The above argument however perhaps does not adequately meet an objection that has been put to the writer thus: "Though the apprehension of scientific truth normally yields pleasure, you can apprehend it without pleasure and do not consider the absence of pleasure to affect the truth of your thought, while you cannot æsthetically apprehend unless the apprehension is pleasant (or, in case of ugliness, disagreeable), so that the pleasure qualifies the object apprehended, and in a state of emotional apathy one feels it useless to read poetry or look at pictures." To this the writer would be disposed to reply: First, an æsthetically capable mind harassed by emotional apathy can still to some extent distinguish good and bad art, in other words can apprehend æsthetic truth. Secondly, scientific truth apprehended without pleasure is apprehended mainly as dead fact (like purely empirical discovery); so soon as it is brought into organic connexion with one's ideas of reality the apprehension is accompanied with pleasure. At the same time the objection holds good in some measure in respect of scientific truths that are the fruit mainly of observation or experiment, since such truths always have a certain empirical quality.

To the writer then it appears that art and science provide complementary and correspondent conceptions of reality. In both the freely conceiving mind is active; but the *organon* of art is intuition or imagination (neither word seems quite adequate), through which the *nexus* is divined implicitly in the context of reality and under the aspect of fitness or harmony, that of science is reasoning, through which the *nexus* is recognised explicitly and abstractly, under the aspect of ground or reason. To the likely objection that scientific truth is often divined or at least conjectured intuitively, that in fact the most essential mental process in scientific experiment, namely the framing of hypotheses, is the function of scientific intuition or imagination, it may be answered: First, in the large field common to art and science what under one aspect are scientific truths may under another aspect be perceived or surmised through æsthetic intuition, or again such truths may be perceived or surmised through that practical intuition in which qualities not only of human beings but of objects in any grade of existence are recognised through their phenomenal manifestations; secondly, genuine intuitions must be distinguished from those apparent intuitions which perhaps are really reasonings of a more or less incipient kind—in the latter case, as the thought develops, its reasoning character becomes manifest.[1] Next, art and science agree in spirit but differ in form; truth, the nature of reality, prized for its own sake, would seem to be the essential thing in art and science alike; the essence of art however lies in individualised representation, that of science in generalised explanation; in the one actuality is re-synthetised (primarily) and intensified through selective redaction of truth; in the other it is analysed (primarily — such analysis of course involves a secondary stage of synthesis) and clarified (or at least simplified); in the one knowledge is subtler and more penetrating, in the other it is better defined and more consciously possessed. Again, while over vast tracts we must depend upon one or other alone, yet the correspondence between their respective spheres is really closer than generally supposed. That this is so can be made sufficiently clear if we very briefly survey the range of art according to the primary classification of the sciences, remembering that for every scientific truth there is also an actual or possible metaphysical interpretation, with general implications and corollaries relating to truths of other orders or reality in other grades.

First then, corresponding in some measure to the scientific conceptions of being as such, the postulates of science, namely the uniformity of nature and the persistence of energy, and perhaps in greater measure to the metaphysical conceptions of being (that is, to ontology in the simpler sense excluding the ontological or metaphysical interpretation of the sciences), are certain æsthetic instincts of an indefinite and hardly analysable character; thus matter in great mass affects us mysteriously, inspiring us with an instinctive consciousness or idea—the varying but sometimes considerable subjective contribution in experiences of the kind should be remembered —of what can hardly be called power or life or kinship but seems dimly analogous to all these, and while such influence is largely assignable to qualities of motion, structure, life, consciousness, intelligence, some at least of which are always present, we may perhaps connect with the mere virtue of existence the sense both of latent energy and of fundamental unchangingness, and, behind these again, of qualified "perseity" and of dependence upon a sustaining Power—the actual experience and still more the introspective interpretation of it varies of course considerably according to the person affected. Next, æsthetic insight into the nature of inanimate reality as revealed in physical science is quite limited; thus the representation of a stone suggests little more than the quality of strong, inelastic resistance to pressure, in which at the most only some vague notions as to structure may be contained; at the same time, inanimate nature artistically represented in large masses may be so strongly expressive of material qualities, as weight, rigidity, etc., or of the action, gradual or violent, of natural forces, as even to have scientific, notably geological, interest.[1] Analogous too in character is the impressiveness of structural mass in architectural or engineering erections, especially where these are on a great scale and the material has been handled with skill and insight—in these cases there are of course other expressive qualities, derived from human creative or designing mind. To the metaphysical view of inanimate nature there would seem to be a larger correspondence in art. The character of such intuitions, which are connected chiefly with ideas of strength and persistence, has already been partly noted. It may however be observed here that they have a share in the effectiveness of the primarily formal contrast of inanimate nature, of lofty mountains for instance, with organic and especially with human nature in respect of endurance and transiency, persistence and change, rest and activity. Again, according to Ruskin a very great part of the beauty of nature and of artistic representations of nature lies in the typifying of Divine attributes, and, while the notion of type is probably rather over-emphasised by that writer, yet apart from some sense of Divine imaging or workmanship or perhaps of the indwelling and supporting presence of Divinity, the strength of the appeal made to us even by inanimate nature in hill, sea, sky, light, gloom, etc., is not easy to understand. In connexion next with biology and zoology it is obvious that the expression of natural and of animal life has a very great place in art, and the power of art to bring out typical quality and character is here strikingly revealed. Further, the relation of the artistic and scientific aspects of biological and zoological subjects is sometimes close enough to make possible a certain amount of mutual influence. Thus the representation in painting of some natural feature in plant or animal may bring home with new force to the scientist the underlying causal connexion; conversely, the exposition in a scientific work of the precise character of such connexions may help the artist to a more expressive delineation of his subject, though the example must be distinguished from the case of illustrations in a scientific work, which usually stand on the same footing as the accompanying letterpress, draughtsmanship and language alike being used not as æsthetic media but as means of communicating ideas. While in the artistic representation of natural scenery and of animal life contemplated in its natural setting there would thus appear to be many points of contact with "natural science," the interest corresponding to the metaphysical interpretation is perhaps still preponderant, though it must be remembered that this may be in great part a transferred interest, resting on the analogy between aspects of natural and of human life. As regards psychology the compass of art is very wide, but its chief themes have been exceptional (usually heightened and complex) modes of psychical activity or, again, highly individualised personalities in interaction with a highly specialised environment, personal and circumstantial, and this is a field upon which, by reason of perhaps unavoidable preoccupation in the past with the problems of thought and knowledge, to the temporary subordination of other psychical elements, and with the generalities of human nature, psychological science so far has perhaps hardly ventured. When we come to sociology the range of art or at least of artistic achievement shrinks again. The great creations of architecture, it is true, always embody a social note of unison, and every art is able to represent aspects and elements of social truth. Upon the whole, however, there is not outside architecture relatively very much art that could be called sociological in the sense of the social interest being obviously preponderant. In any case, whatever the future range of sociological art, the creation of fictitious cultures and societies with a freedom even distantly approaching that of fictitious personalities in the novel and drama seems impossible. On the other hand, the ease with which social matter of direct value to scientific sociologists lends itself to artistic handling in histories and other descriptive writings seems to indicate that the possible common ground is more extensive here than in the case of psychology.[1] It is however as regards the truths of psychological and sociological metaphysics that art and science seem to draw closest together again, whence, for instance, Dante was able to develop his conception of spiritual reality with constant reference to the speculations of scholastic psychology, human and Divine. Again, the correspondence seems to be clearer throughout in respect of what may perhaps be called art and science in the second degree, that is, artistic or scientific commentary, criticism, interpretation, so that sometimes it may be difficult to say whether such work is rather artistic or scientific in spirit. Yet even here the correspondence is obscured by the fact that while the art of art is known as literary and artistic criticism and interpretation and the science of art as æsthetics, there is no name for and appears to be no explicit recognition of either the science of science or the art of science, such art, that is, as should interpret and set forth in the concrete the true meaning and character of the sciences. The chief work of the science of science, an expression sometimes but in the writer's opinion quite wrongly applied to logic, is the determination of the scope and value and the inter-relations of scientific principles and of the various sciences and branches of sciences, also of relative science and metaphysics. As regards the art of science the writer must own that he scarcely knows where examples may be found. In part this may be due to the limited range of his information; but in any case the amount of such art cannot be great. Bacon is perhaps the most conspicuous name; among modern writers Ruskin (in relation chiefly to the social sciences) and Tennyson may perhaps be safely instanced. The attitude of the writers mentioned towards particular speculations is censorious in the main and marred by faulty conceptions; but all had a real if defective grasp of science.[1]

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[1] Apparent intuitions of the kind may certainly give rise to mental images; such images, however, are the mere accompaniments of and aids to thought and have no imaginative quality in the more ordinary meaning of the term.

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[1] But geology of course is not a primary science.

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[1] In strictness sociology should hardly perhaps be reckoned as an independent science since it is not concerned with a distinct grade of reality, the "social consciousness" being either merely a convenient expression for more or less consciously recognised, mutually strengthened, and socially operative likemindedness, or, if meant literally, a figment, "idol". Against this it must be remembered that in passing from psychology to sociology one is conscious of an appreciable change in the way of greater objectivity of view and a larger use of inductive methods.

A brief passing reference may be made here to the controversy whether history is an art or a science or both. A pure art or a pure science it is neither since it deals with fact rather than with artistic or scientific truth. In a looser sense it is both; for it can be handled either on artistic or on scientific lines according as the purpose is to represent or to explain; in the former case it provides material for psychological and sociological art, in the latter case for psychological and sociological science. Of course history has a further and independent interest for its own sake as a record of actuality.

As regards now the art-correlation of the formal sciences—logic and mathematics—it is in the first place obvious that both sciences are concerned with the truths involved in the formal, so far as distinguishable from the essential qualities of reality. Such truths can only be truths of consistency. The writer's limited knowledge is nowhere more limited than in respect of mathematics; he would surmise however that the ideal (whether fully attainable or not) in the case of pure (or formal) logic and of pure mathematics alike is an entirely generalised and symbolical treatment of reality. The difference between the two sciences seems to the writer to be that the one tends to treat of formal reality as qualitatively or rather as connotatively, the other tends to treat of it as quantitatively or rather as denotatively regarded. The point that these are tendencies should be noticed; so far as in any particular instance of either science the character attributed to it is only imperfectly realised this must be either because the method proper to the science is incompletely developed or because the problem is not one of purely formal quality. In "mixed" logic and in "mixed" mathematics the test of formal consistency is extended to principles not in themselves irresistibly evident through the dilemma that if some assumed principle is not true then formal consistency fails, or else, in proofs where verification is necessary—strictly it is perhaps always necessary for the irresistible proof of essential principles—that the theory of probabilities is not vindicated; since however such absence of vindication is always conceivable even where virtually impossible, proofs of the latter kind always fall short of formal perfection.[1] Between formal science (pure logic and pure mathematics), as thus viewed, and the formal element in art—probably art is never purely formal in quality any more than it is for instance purely psychological or either purely relative or purely absolute—the correspondence must be fairly close. Formal art would also seem to be concerned with relations from which essential interdependence is excluded, with such relations however regarded as relations not of implication but of congruity, both the congruity of similars and also that of dissimilars (in other words effective contrast or antithesis, in which the juxtaposed dissimilars, through mutually bringing out in each other complementary aspects or qualities, combine to present a single integrated whole). It may further be suggested that something in the nature of a mathematical element is most obvious in decorative art and in architecture, perhaps also in music, Leibniz's description of which as an unconscious arithmetic may be recalled, though the reference perhaps was chiefly to the nerve-stimulus, anticipating later discoveries. There is also, it must be observed, in both art and science what may be described as a sub-formal element, related to psychological and physiological laws of attention, effort, etc., and entirely subsidiary in value.

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[1] That Bacon wrote science not perhaps, as Harvey said, "like a Lord Chancellor," but largely with the imaginative outlook of an artist, is a suggestion perhaps unlikely to obtain general acceptance. The point cannot be judged apart from a survey of Bacon's works, with which the writer himself has practically no first-hand acquaintance; but it may be urged here that Bacon does not appear to have had any just appreciation of the scientific work of his age, that his theory of "forms" and his scheme of tabulated records contain no effective contribution to science, that his scientific anticipations may be explained as instances of that "instinctive" and rather cloudy divination of physical or biological truth which occasionally results from great artistic insight—his description of the nature of heat has palpable imaginative quality,—lastly, that his scientific influence has been stimulating rather than directly helpful and is largely attributable to his luminous aphorisms, expressive terminology, and range and splendour of vision.

The comparison needs to be completed by a reference to ethics, understood as comprising not merely the ideals of conduct but those also of will and conscience. Reality may be viewed either from the point of view of the actual or from that of the ideal (or right)—what it is desirable should be actualised. The difference certainly is not merely one of aspects, though to make it as far as possible such, that is, to actualise the ideal should be the sovereign aim of human effort and the problem of all practical morals. Further, each of these aspects to a very great extent implies the other—in understanding truly the nature of that which is we also recognise that which should be; hence it is impossible to handle satisfactorily any of the great truths of human nature without close, even if entirely implicit reference to the ideal. When in science the ideal rather than the actual forms the subject of investigation, the problem is ethical. Similarly the themes of art may be primarily ethical; of such art the poetry of Dante is perhaps the best example; in the plays of Shakespeare on the other hand, even where the theme is some example of the conflict of right and wrong, there is an intense and ever-present interest in reality merely as such.[1]

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[1] A recent definition of mathematics—"The science of the logical deduction of consequences from the general principles of all reasoning"—indicates its close affinity to logic. The view of logic taken above involves the truth of these three propositions: First, purely logical reasoning is essentially hypothetical or rather conjunctive—a typical but quite simple example would be the following—*If A implies B and B excludes C then A excludes C*; secondly, as the example just given shows, such reasoning is not accurately presented in the syllogism with its three terms, always denotative in form and sometimes in meaning, its copula and its categorical conclusion; thirdly, logic is concerned immediately with principles not of thought but of reality, the further matter of the mind's operative recognition and observation of such laws belonging rather to psychology and epistemology.

Religion finally, though its place has virtually been indicated, should not be passed over without explicit mention. For present purposes religion can only be regarded—however inadequate the conception—as natural theology, which may be described as the artistic or scientific account and interpretation of the pure Ultimate or the unqualified Absolute, in scholastic phrase of that which is both *per se* and *a se*. Such an interpretation is gained most conspicuously along two lines of thought, first the ontological, the consideration of being as such and of its implications, for instance the principle of sufficient reason or the ontological argument, secondly the psychological, as when human qualities are predicated *eminenter* of the Divine Nature; but perhaps every branch of knowledge can here be utilised in some way, directly or indirectly. The relevance of religion to ethics also need not be emphasised.

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[1] In some classifications of the sciences ethics figures as the final and crowning science; at other times it is grouped with logic and æsthetics—a somewhat oddly assorted triad—under the category of normative science. In the writer's opinion every branch of knowledge dealing with an aspect of life or existence of whatever grade where there are in any sense actualisable ideals has its quasi-ethical and consequently its normative side, and if this is so, ethics cannot rightly be considered an independent science, but, as concerned primarily and immediately with the personality and with the right disposition even more than with the right ends in conduct, should be treated—whether or not for didactic purposes, at least for those of classification as a branch of psychology. Further, the insertion of sociology between psychology and ethics is surely an indefensible arrangement, since a perfect sociological ethics would involve a real social self-consciousness and will. At the same time in no science do ideals play a greater part than in sociology, and it is obvious that only in close reference to such social ideals can the personal ideals of ethical psychology be worked out in their fullest possible content.

The correspondence is, as already said, obviously defective, and the feature where that defectiveness is most manifest, the comparative incompetence of art over a large area concerned chiefly with relative truth in the lower grades of reality, seems to require a brief consideration. For this it will be best to note first the general relations both of art and of science to phenomena and to the reality behind phenomena. The function of art as regards phenomena is, first, like that of practical intuition but in a rather different spirit (see later), to interpret, to translate these in terms of the corresponding reality; secondly, in the actual creation of works of art to embody such interpretations in imitative or analogous phenomena or through direct, non-phenomenal appeal to the sensuous memory. The reality however that phenomena express is almost entirely the higher-grade but remoter reality; in the human face or voice for instance what phenomena express primarily and mainly is the remotest, the psychical reality, that is, states and dispositions of soul, then the biological or physically vital, while concerning the merely physical reality investigated in chemistry and physics they are perhaps totally unsuggestive. The function of art as regards reality is to set forth recognisable truth, truth to some extent self-evident when once set forth and not urgently calling for verification—indeed, strictly understood, verification is impossible in art—and this function it fulfils with the aid but not entirely through the instrumentality of phenomena and phenomenally derived phantasms.[1] The function of science as regards phenomena is in the physical sciences (physics and chemistry) to explain them by, in a sense to resolve them into non-phenomenal factors and processes (in physics one might say to some extent into sub-material activities), in the biological sciences to explain them by factors and processes that are partly phenomenal or phenomenalisable (as the biological unit, the cell, with the help of the microscope) and partly non-phenomenal (metabolism for instance as regards its chemical character), while the connexion throughout between phenomenal appearances and the non-phenomenal factors and activities corresponding thereto is in the main apparently arbitrary.[2] The psychical sciences on the other hand treat of psychical states and qualities and are not directly and essentially concerned with phenomena in the strict sense. The function of science as regards lower grades of reality is to reach truths that, because their connexion with phenomena is apparently arbitrary, require to be established by verification; as regards higher grades of reality it is to reach recognisable truth, truth the verification of which, though sometimes very desirable, is not urgently required and is seldom practicable. Since the connexion between phenomena and reality in physical and to a very great extent in biological science is apparently arbitrary, it is not clear thus far why science should show to so great an advantage in comparison with art in dealing with those spheres. The explanation may be expressed in three propositions. First, in spheres where phenomena are unexpressive and the connexion between phenomena and reality is apparently arbitrary the only way to truth is by the verification of hypotheses. Secondly, it is just those spheres in which verification can be most largely, easily, and convincingly obtained. Thirdly, verifying tests can be applied only to explanatory generalisations of a relative kind, that is, to scientific (non-metaphysical) hypotheses, because only in these is a sufficiently simple and clear-cut issue obtainable.

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[1] To prevent this argument from becoming too intricate we must pass over the distinctions in art generally and in the respective arts individually between the functions fulfilled by actually and those fulfilled by representatively expressive phenomena, also by phenomena and by reminiscent phantasms, distinctions requiring careful handling.

[2] That the impression of arbitrariness may not really be complete and absolute would seem to be involved in the fruitfulness of hypotheses.

There is indeed one important point as regards which it might be urged that the correspondence clearly fails, and further in failing there fails to a great extent everywhere; art, it might be said, stands in a relation to reality altogether different from that of science; we can speak of it, very inaccurately, yet not altogether indefensibly, as an imitation of reality, and the resemblance is at times so close that, especially in the case of certain lower artistic forms, coloured wax figures for instance, we may momentarily take the imitation for actual. That art and science are differently related to reality is of course obvious; but only a difference that implied a greater nearness to reality of one or the other would affect the argument. At first it may seem that the difference is of such a kind in favour of art; yet in the writer's opinion a little reflexion will show that this is not really so. Art, which is more individual and particular than science, comes nearer to reality at individual and particular points, but not upon the whole. Thus a painted portrait

But here the question arises how far hypotheses are suggested by phenomena themselves, how far by earlier, perhaps chance discoveries or earlier partly rejected hypotheses. A further point is how far the explanation of phenomena, how far knowledge of reality purely as such is the speculative (not the practical) end.

may be very like the particular face after which it is painted; but from the typical human face, so far as we can speak of such a thing, it will probably, as concrete and complex, differ considerably, even acutely. A scientific principle on the other hand, as abstract and simple, holds equally of all individual instances.

But if art and science are to be considered as normally correspondent in aim and content, as both equally concerned with truth and reality, the need arises of explaining the much earlier development of the former as well as the apparently far more enduring value of its individual embodiments. As regards the earlier development of art, this seems attributable partly to a far smaller dependence upon elaborate instruments beyond the ideas and the resources of early times and upon data not easily procurable and requiring to be sifted very carefully, partly to a more obvious connexion either with the means of achieving necessary or useful practical aims, as architecture with building, "literary" art with language, written or spoken, or else with the skill appropriate to such aims, as "literary" art with persuasive power, or finally with the capacity to afford enjoyment unrelated to the acquirement or possession of truth, a circumstance that largely explains the greater part played by imagination than by reason in primitive cosmological legend, since the uncivilised like the civilised man required diversion and amusement, and for this must, with social functions less differentiated, have looked in part to the makers and shapers of myths.

The other point, the contrast between the enduring value of works of art and the rapid obsolescence of scientific theories and the books expounding these, or, to put the same thing in a different light, between the progressiveness of science and the unprogressiveness of art, is partly connected with the above, but will be best treated independently of it. In the first place then, art is not, in the writer's view, essentially more enduring or less progressive than science, but it is so both apparently and also, in a sense, accidentally. To take the latter point first. The truly, as distinct from the apparently superior progressiveness of science is due chiefly to the extraneous aid given by verification—in the same way those sciences are the most progressive where verification is most practicable. And the cause is obvious; if the distinction between what is correct and what erroneous can be swiftly, easily and certainly established, not only is effort thus directly prompted and stimulated, but much effort that would otherwise have been unprofitably misapplied can be guided into the right channels. Next as regards the merely apparent difference. The possible analytical problems of science being fewer than the possible synthetic themes of art, it follows that work in connexion with the former is more "intensive" in character. Yet what is gained in depth is lost in breadth. In other words, science advances more through the rehandling of already handled aspects of truth, art more through the fresh handling of untouched aspects. At the same time, the difference must not be overstated. Many of the greatest works of art have been in some sense rehandlings of traditional themes, which themselves have only gradually taken shape and often are traceable ultimately to very crude and primitive notions—consider the enormous development, beginning in the speculations of a culture hardly removed from savagery, that is discernible behind the modern, chiefly decorative use of Greek or Roman mythological figures; there is too a certain amount of rehandling in much, perhaps in most art; further, a tendency to restrict artists to traditional themes has operated strongly during various periods, in some cases of quite extraordinary artistic vigour. All this, it is true, has not resulted in the supersession on any great scale of earlier artistic work possessing excellence of a high order. But, it should be remembered, identity must always be far less perfect in the case of artistic themes than in that of scientific problems. Further, as regards the formative arts, where the tendency mentioned has shown itself most powerfully, every work of art exists in a single and unique material embodiment susceptible of private or public ownership and therefore the supersession of an earlier masterpiece by one later and more mature is obviously impossible in the sense in which one theory may be superseded by another; in the case of sculpture of course casts can be taken, but, possibly to some extent on sentimental grounds, these are not valued in the same way as the originals. It is also probably much more true of art as a whole than of science as a whole that particular phases and types of civilisation offer, while actual, specially favourable opportunities for the observation of particular aspects or portions of truth such as particular personal types (thus one can conceive a twentieth-century Hamlet but hardly a twentieth-century Falstaff), and obviously work done under advantageous conditions of the kind will not easily be surpassed in later ages. At the same time a distinction should be made between the just and the exhaustive treatment of a particular theme. Earlier artists overlook aspects or implications of their themes that would not be ignored in later times, and in this regard it is conceivable that many even of the finest artistic creations may be transcended by later work on the same lines—on the other hand, enlargement of outlook may involve a lowered intensity of realisation. Finally, the obsolescence, partly due to mere accumulation, of much artistic work not of the first quality, also, on the other side, the permanent interest and value, at least for experts, of much early and even naïve scientific theory should not be lost sight of.

If we consider scientific books rather than scientific theories, there is a further explanation of their tendency to become obsolete. Artistic work, as already said, is always in some sense concrete and the possible versions or varieties of a concrete idea are inexhaustible and each has its own individual worth and significance. Science on the other hand deals with abstract ideas, the differentiation of which is far less subtle and is not dependent upon the precise language used; consequently no particular combination of words is associated with such ideas, which in fact only require to be set forth in words for purposes external to the ideas themselves, as for communication to other persons, and once the author's meaning is grasped, an abbreviated scheme will serve better for many purposes than the original work. Hence, except perhaps as regards an occasional *locus classicus*, no supreme value attaches to the form of a scientific work unless it has high artistic excellence as well, a combination that is difficult and usually impossible.[1] The main qualities required in scientific language are qualities of exposition, notably clearness and precision; an easy flow, with sentences well built up, is a further important advantage and here and there a more distinctively artistic handling may be desirable; but such qualities, while useful as well as decorative, are not essential in any way.

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[1] That artistic and scientific qualities for the most part are mutually exclusive will perhaps appear to some a hard saying. We may therefore deal very briefly with one or two facts that might seem to contradict it. Thus the writings of some authors have, it is true, both artistic and scientific merit in a pre-eminent degree, but alternately rather than simultaneously. Again, a great engineering work can hardly afford much scope for art, but it may yet, like a natural form, the human figure for instance, have æsthetic quality, and therefore artistic interest, as manifesting for instance its character or function or the thought and skill of designer and builder; further, engineering science is of course only applied science, that is, it does not, except accidentally, extend our knowledge of reality, it does not explain but merely contrives. In architecture there is certainly more room for the close union of art and applied science; but it must be remembered that alone among the greater arts architecture is always mixed art, that is, has necessarily both an artistic and a practical character: the point may also be suggested that skill in building is often perhaps more nearly akin to art than to science, that good building may proceed and in former times did perhaps mostly proceed from practical intuition into mechanical laws and into the physical qualities of the material employed.

It should be observed that the contrast between art and science in these matters would necessarily be exaggerated if the consideration of them were restricted to a historical survey. This is because the labours of scientists in the sphere of relative knowledge have from about the time of the Renaissance till quite recently been concentrated to a disproportionate extent upon the lower grades of reality, that is, upon those grades where the problems to be solved were, if abundant, yet in comparison less numerous, where the opportunity for verification was most ample, where even verification itself has had a conspicuously progressive character owing to constant increase of data, improvement in methods and invention of more efficient instruments, where, in consequence of all this, progress, real or apparent, has been most conspicuous.

On the further question how far mutual help, of which there has not been very much so far, may be possible in the future a single observation must suffice. Mutual influence has dangers as well as advantages; thus it has been maintained that knowledge of anatomy is injurious to graphic art as strengthening the natural inclination to represent what is known as well as what is seen and so impairing the "innocence of the eye".

It may be worth noting that certain of the points which have been urged here in relation to art and science can be given a yet larger application. First, the distinction between relative and absolute truth, a distinction already extended from science to art, admits of being extended again through a similar argument from the ideational (the contemplative and speculative or, to combine original and present meanings, the theoretical) to the practical sphere; that is, in the latter sphere too there are both those who for the most part remain on the plane of relative truth, where there is much taking for granted—or, often, ignoring—of fundamental meanings and values, and those who have a greater capacity for penetrating to the hearts of things. At the same time the practical worker is concerned with means rather than ends; he is less a seer or a discoverer than a contriver, immediately busied not so much with the nature as with the plasticity, the possibilities of reality; his true function may be described as the actualising of the ideal, a function requiring a just sense alike of the practicable ideal and of the pliable actual. Again the distinction between the reasoning or abstract and the intuitional or concrete mode of thought, which in the ideational sphere was associated with the distinction between science and art, seems to hold good also in the sphere of actuality, of practical affairs; this, if admitted, involves the rejection of the usual tripartite division of thoughtful activity as artistic, scientific or practical. Finally, the classification of the sciences, which appeared to be applicable—with qualifications—to art as well as to science, in other words to hold good in the ideational sphere generally, may be extended —again with qualifications—to the sphere of actuality also, that is, men's practical activities may be classed as chiefly sociological, psychological, etc., though obviously the same kind of activity, whether reasoning or intuitional, may have very different importance in the world of actuality and in that of ideation, the chief cause of such want of correspondence being the unequal and fragmentary way in which, from the constitution, and development alike of the physical world and of civilisation, reality in its practical aspects interests and appeals to mankind.[1]

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[1] Perhaps no point in the above long argument is likely to obtain less acquiescence than the statements, opposed, so far as the writer knows, not only to common-sense opinion but to the universal opinion of metaphysicians, psychologists and writers on art, respecting the relation of art to emotion. The writer may therefore be justified in returning here to the point and trying to estimate quite summarily the place of emotion in human nature. In his opinion, just as thought is a conscious activity of mind, so emotion is a conscious activity of psychical existence. But obviously not all emotion is æsthetic. Nor again is all non-intellectual psychical activity emotional. We must first distinguish here on the one hand sentiment and emotion or "feeling" (which need not for present purposes be distinguished from emotion) and on the other intent (or aim) and effort, while knowledge and thought occupy a mediate position between these two kinds of psychical condition and activity. Further, to complete the constitution of human nature we must add all bodily, that is, all vital or physiological characteristics and finally the power of self-determination or self-conscious choice. The relations and interaction of these various elements are, it is obvious, extremely subtle and complex; one or two remarks must suffice here. First, the function of thought is in ordinary views unduly circumscribed not only in relation to art but generally. To take two fairly simple instances. A "sense of honour" is not usually regarded as intellectual, yet it would seem to consist very largely in a right understanding and appreciation of certain moral obligations and proprieties—of course the extent of such understanding and appreciation depends partly upon the extent to which one acts according to one's "lights"; again, determination in the pursuit of an object may really be due less to characteristic masterfulness than to an intense practical and, if one may style it so, pragmatic, though not necessarily well-founded idea of, for instance, its gratifying or its beneficial potentiality—such perhaps is the case with Lady Macbeth. And thought is often perhaps of a much more subtly implicit and "instinctive" kind than is indicated in these examples. Next, somewhat as the

term "emotion" is used also for the imaginative or intuitive insight from which emotion of the æsthetic kind results, so the term "will" is used not only for self-determination but also for intent and effort, which, though quickened by an exercise of self-determination, are in themselves distinct therefrom. Again, it must not be taken that the writer assigns a low value to right sentiment and emotion, which seem to him to have an ampler range and a reference more directly social and to be more in the nature of ends in themselves than qualities of "will" or "character" like determination, endurance, "grit". At the same time if the appeal of art is chiefly to emotion and that of science chiefly to thought, the inferiority of art at least to a priori science would be difficult to disprove.

V.—A DISCUSSION OF MODAL PROPOSITIONS AND PROPOSITIONS OF PRACTICE.

By Raphael Demos.

I shall begin with the consideration of modal propositions expressing possibility, probability, and necessity. I propose to examine immediately the form of such propositions, offering in the end a definition closely analogous to the one which I have offered with reference to negative propositions in a recent number of Mind.

If we agree to designate propositions such as "There is a God," "X is attending to his work," "I shall be there at ten"—that is, propositions which obviously assert fact—factual propositions, then it is clearly true that modal propositions are sharply in contrast with factual propositions. Examples of modal propositions would be, "There must be a God," "X is probably attending to the work," "I may be there at ten," where nothing factual seems to be asserted. Again, in explaining, upon going out, that I am taking my umbrella along because it might rain, or because rain is probable, I am taking account of a situation which may be characterised as a risk (the probability or the possibility of rain), but which does not imply rain as a fact. For, it may turn out that no rainfall occurs during my entire walk; yet my precautionary measures remain justified, for the risk of rain was there even though rain was not present as an event. Consequently, modal propositions are, on their face, so far formally different from factual propositions as to determine reference to a type of being (which may be called 'modality') in no way identifiable with fact or existence.

Undoubtedly, commonsense balks at this point; empirically speaking, only two alternatives are open as to a thing's existence: either it exists or it does not exist, and there is no *tertium quid* of possible existence. To borrow an example from Bradley, suppose a ship has sailed from Liverpool for New York. Then we say, it *may* be in New York and it *may* be at the bottom of the sea. As a matter of fact, the ship is somewhere—and being where it is, it is not *possibly* where it is. The external world contains only the actual fact of its being somewhere, and the possibilities expressed by the above modal propositions do not seem to correspond to objective reality. So with necessity, conceived as a modification of being. Whereas possibility appears to qualify a thing as less than real, necessity appears to qualify it as more than real. Yet within experience we discover nothing which is either short of or over and above reality. Accordingly, rather than adopt modal propositions in their given form and be compelled to posit a type of being which experience refuses to recognise, it seems preferable to apply to them a special interpretation which would exhibit such propositions as referring to the familiar world of things and facts and which would thus render unnecessary the extension of the world of reality beyond the bounds of existence *per se*. An interpretation of this sort would possess claims of preference on the score not only of empirical evidence but of logical convenience as well, in that it would tend to simplify matters by a prudent use of Occam's razor.

The problem now before us is this: how interpret modal propositions in a way which shall present them as referring to no other field than that of the factual world. The popular mind and even philosophy have been prone to the view that 'possible' may be defined as the absence of the actual, *i.e.*, as identical with any class of things of some sort which is null, —in simpler language—with what is not. Such a view is uppermost in the mind of Bergson when, defining the future as what is not and the present (along with the past) as what is, he restricts the scope of possibility entirely within the limits of the future. Commonsense, too, tacitly grants the same view when, after things have come about in a certain way, it declares that once they have come about like that, it is not possible for them to have happened otherwise, and thus opposes the possible to what is.

Yet the belief in question is untenable, for what is declared to be possible may be actual as well. With reference to the prisoner at the bar, I judge: "that he is guilty and that he is not guilty are the only alternatives possible". Inasmuch as one of these alternatives is necessarily realised in fact, it follows that one of the above possibilities is an actuality as well. Consequently, the definition of possibility as a function of actuality, more particularly, as the absence of it, is inadmissible.

Analogous considerations apply to probability. It is perhaps true that probability is expressible in terms of a ratio; thus, we say that the probability of X's possessing the property *a* is two to five. One might conceivably interpret this to mean that of any five cases of X, two are such as involve *a*; in this way one would be defining probability as the expression for a certain relation among actual things. But, of course, this is not true, and the doctor who informed his patient that he was bound to recover since ninety-nine cases of the same disease had already proved fatal in his hands, and since one per cent. of such cases are known to recover, was patently wrong. In the ratio which expresses the amount of probability, the terms are variables and only the relation is a constant, hence, the fact that a certain ratio holds true does not imply that it holds true within a collection of a particular number, *i.e.* as a relation between groups of given objects. The reflection might occur to some one that the ratio, though not realised in any finite collection, is realised when the collection is large enough to be infinite. Thus Venn (*Logic of Chance*, p. 146) maintains that every chance is realised in the *long run*, the long run being, I presume, the totality of events and apparently infinite. This consideration cannot be maintained, because the term ratio has no meaning in the field of infinite collections, and, in general, the ordinary arithmetical properties of number do not obtain in such a situation. In sum, probability cannot be properly construed as a relation between groups of data, whether the collection considered be finite or infinite.

Modality, then, is not to be interpreted as a function of the actual. No more is it correct to interpret it as a function of the judging subject, say, of the amount of knowledge which the subject possesses about the objective situation. It is in perfect order to *debate* the question of the possibility of an event, and whether a certain event is probable or not is a matter to be settled only by a consideration of the relevant evidence. Naturally, there is a reflection of the objective situation in the subjective attitude, and a proposition which is necessary is believed in with a great measure of conviction, but it is the former that determines the latter, and the nature and strength of my conviction vary as functions of the degree and nature of information that I possess about the situation.

I have attempted to clear the ground before taking up the constructive part of this discussion, and now I proceed to formulate the view about modal propositions which I believe to be true. Take a phrase such as "possible war" as it occurs in any wider context, say, in the proposition "America must prepare for possible war," where it looks as though there were reference, in terms of the phrase "possible war," to some objective entity. Being a descriptive phrase, the latter asserts existence implicitly, and, stated explicitly, is of the form: "there is a possible war, or, a certain war is possible" (and America ought to prepare for it). Now, it must be at once pointed out that possibility is not a predicate of the object 'war' in the proposition in question, for, after all, a possible war is no different from any other war. Possibility is, in fact, a qualification of the whole existential proposition "there is war," and what one means in using the proposition is not "there is a possible war," but "it is possible that there be war". So, too, the proposition "we may win the battle yet" is really of the form "it is possible that we win the battle". We are thus led to the view that possibility is a function of the entire content of the proposition in which it occurs. The same is true of probability. A phrase, such as "probable rain" put in propositional form without further scrutiny, would appear as "there is probable rain" where probability seems to qualify rain. It is obvious that this is not the case, and the more correct view is to the effect that probability is a function of the entire propositional content; accordingly, the above proposition should read "it is probable that it will rain".

The question now may be raised as to the nature of the modification of content brought about in terms of possibility and probability. In short, are possibility and probability attributes or are they relational qualifications, like 'father of' or 'square of'? Evidently, relational qualifications. With reference to a given proposition, probability may change when the situation changes. "That the patient will recover"—which was probable yesterday—may not be probable to-day. Thus, probability must express a relation on the part of the proposition of which it is the qualification to *the character of the objective situation.* In other words, a proposition is probable, not as such, but *on the data.* Possibility, too, expresses a relation on the part of the proposition which it qualifies to the objective situation, and I judge that war is possible upon the basis of my opinion on the state of affairs. There is, thus, a correlate implied in any proposition expressing possibility or probability, namely, the term "nature of the situation," or "state of affairs," and by making explicit what is implicit one changes the appearance of the proposition accordingly. *E.g.* given "war is possible" (in the proposition, America must prepare for possible war) we have really "the state of affairs is such as to render the existence of war possible," and the whole proposition should read: "the state of affairs is such as to render the existence of war possible, and America should prepare in view of it (*i.e.*, the state of affairs)". Again, given the proposition "rain is probable," we have really "the data are of such a character as to render the event of rain probable". Now, what I have just designated "the nature of the situation" or "the state of affairs," or "the character of the data," is nothing else than the proposition true of the relevant facts ("what we know about them"), and the above statement might also read: "the proposition true of the facts renders the existence of X possible or probable," or again, "a certain proposition is true which renders, etc." It is obvious that propositions asserting necessity are subject to the same interpretation, so, without further ado, I venture to state the general conclusion that modality is a relational function of propositions, and that a modal proposition of any sort is of the form: a certain proposition *q* is true which renders a stated proposition *p* possible, probable, or necessary.

In view of these considerations upon the structure of modal propositions, I shall now suggest a general definition which may cast light upon some problems that occupied us earlier in the article. Any true proposition (for that matter, any proposition) may sustain a certain non-symmetrical, transitive relation to other propositions,—a relation which I shall call implication.[1] Implication is a relation such that when *p* implies *q*, one may infer *q* from *p*. The relation admits of degrees; it may be probable implication, thus yielding probable inference; it may be necessary implication, yielding the geometrical or canonical type of inference; finally, it may be such as to render the inference merely possible. Now, any true proposition which sustains a relation of implication to some other proposition may be so described, and all modal propositions constitute precisely descriptions of some true proposition in virtue of the relation of implication which the latter holds to the proposition stated. The proposition "to-day we shall probably stay indoors" is really of the form "the state of affairs is such as to render our staying indoors probable" where one is describing the state of affairs, namely, a proposition true of the facts, say, "that the weather is going to be bad". Again, in the proposition "America should prepare for possible war," America is urged to prepare in view of the state of affairs which renders the existence of war possible, namely, the fact of internal or external trouble.

By thus subsuming modal propositions under the category of descriptions we solve important difficulties. A modal proposition, like any other description, is an incomplete symbol in the form in which it is ordinarily stated, and its apparent object (possibility, probability, or necessity) is a fiction. It must be so interpreted as to involve the assertion of existence, in this case, the assertion of the truth of some proposition. Thus, "*p* modally" is transformed into "a certain *q* is true which implies *p*," where the reference is to a true proposition, and hence, ultimately (since a proposition asserts fact) to fact. And furthermore, modality, as a term, is transferred from the field of objects to which reference is made to that of relations among propositions, and it now is seen to function as a descriptive term in the complex in which it occurs.

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[1] The term implication is used arbitrarily in this connexion, but no better one is available for the purpose in hand.

To recapitulate the results of this inquiry, I have analysed a modal proposition into the form "a certain proposition *q* (where *q* is a variable term) is true which implies a certain proposition *p* (where *p* is a constant term)," and I have defined it as a description of some true proposition in terms of the relation of implication (in any one of its forms of possibility, probability, or necessity), which the latter sustains to some other proposition. Doubtless this inquiry leaves a number of problems connected with modal propositions unsolved, chief of which is the question as to the conditions which determine the relation of modality among propositions; when is the relation one of 'bare' possibility and when is it one of 'concrete' possibility; whether probability is further analysable into simpler elements, whether it can be stated numerically, and what are the determinants of its amount. All these are problems important indeed, but not directly pertinent to the inquiry or essential to the conclusion, and hence will not be dwelt upon in this article.

I shall now take up propositions of practice, that is to say, propositions such as "You ought to know better," "X should see the doctor at once," "Y had better buy a new suit of clothes". Prof. John Dewey has pointed out (*American Journal of Phil. and Psych.*, 1905, pp. 505 ff. and 533 ff.) that such propositions do not refer to anything *given*, to any fact; thus in asserting that X ought to visit the doctor, one is not stating what X is doing, or what the matter with X is. Apparently such propositions constitute a class formally different from that of factual propositions, and correspond to a type of objects incommensurable with that of things or facts; as Dewey says, they imply a type of being which is an incomplete and consequently an indeterminate situation, —'doing' rather than 'being,'—the propositions themselves indicating the manner in which the completion is to take place. In what follows, I shall contend that it is not necessary to assume a distinct type of being of this sort, and that through the application of a special, and, from the point of view of experience, very natural interpretation to propositions of practice, it will be made to appear that the world of reference for such propositions is ultimately the familiar world of things and facts or events.

Consider a proposition such as "X ought to visit the doctor". Now, the place of the term "ought" is really before the rest of the proposition; in other words, "ought" is a function of the entire content of the proposition. What one means by the above proposition is "it is good (or proper) that X visit the doctor," or, more colloquially, "a visit by X to the doctor is a good thing". By this treatment, "ought" is made to appear as a "value-predicate" for the proposition as a whole. Similarly, the proposition "One should respect other people's feelings" is, more properly, "It is needful that one respect other people's feelings," where "should" occurs as a qualification of the proposition as to respecting other people's feelings. Generally speaking, all propositions of practice are expressions in which a value or 'ought'-predicate is attached to a given proposition.

But we must carry the analysis a step further. A given proposition may validly possess different value-predicates under different circumstances; thus, to-day it is worth while that X should visit the doctor; to-morrow, it will be worthless, since too late. In other words, the proposition alters its value-predicate in relation to the nature of the situation, and consequently goodness (rightness, propriety, needfulness, etc.) is a relational term, and its presence in a complex implies the presence of a referent as well, such being the expression "the nature of the situation". Thus, I assert that X should buy a new suit, *under the circumstances* (*i.e.*, because the suit he now wears is worn out), and given the statement, "it is needful that X buy a new suit," we have really "the state of affairs (as to X's clothes) is such as to render his buying a new suit needful".

To recapitulate, (*a*) the ought-predicate is a function of the entire proposition in which it occurs, (*b*) it is a relational function, and hence its occurrence implies the occurrence of another term—its correlate—in the same complex, namely, the phrase: "the nature of the situation," (*c*) since one may know a value-proposition without knowing what factor exactly in the situation necessitates the action urged (as when one is informed of the proposition), the phrase "the nature of the situation" occurs in the proposition as a variable, that is, without specification. Summing up, given a proposition of practice, we have really a proposition of the form, "the nature of the situation is such as to render this or that act proper or good". But the 'nature' of any situation, expressed in terms of the vocabulary of epistemology, is the *proposition* true of it, and hence a proposition of practice may be said to be of the general form "the proposition true of fact renders a certain act good," or, "a certain proposition q is true which renders a certain proposition p (content stated) needful or good".

I shall now consider the following question: The above point as to form being granted, how must propositions of practice be characterised? The reply is, as descriptive. A true proposition may sustain to other propositions a certain non-symmetrical, transitive relation which I shall call "demanding," "requiring," or "necessitating". The propositions toward which this relation may be sustained are generally "modes of action," that is, propositions asserting facts of the nature of an *act* on the part of some individual or individuals. One might thus say, "the fact that the harvest this year has been poor necessitates that the country should import grain from abroad," where the relation of necessitating obtains between the two propositions (as to the poor quality of the harvests and the importation of wheat, respectively), the second of which describes a certain mode of action. Any description of an object is achieved through reference to some function of the object, and a proposition of practice is precisely a description of a certain true proposition by the fact that it sustains the relation in question to some proposition asserting action.

Thus, the proposition "wheat ought to be imported" is a description of the "state of affairs" (which is a proposition true of the facts, *i.e.*, "that the harvest of this year has been poor"), by the fact that it necessitates that wheat be imported. Accordingly, instead of the assertion, "the harvest of this year is poor" we may have the assertion "a certain proposition is true which requires that wheat be imported into the country (or renders the importation of wheat into the country needful, or proper, or good)". Inasmuch as it is understood that one is referring to the proposition true of the situation, mention of the fact is omitted; the correlate being thus dropped, the relation (of requiring) assumes the form of an attribute; we then are left merely with the statement: "it is needful that wheat be imported," or "wheat should be imported"—the familar form of all propositions of practice.

Hence, a proposition of practice is definable as a description of a true proposition in terms of the relation of requiring or necessitating, etc., which it sustains toward some other proposition referring to a mode of action. Like other descriptions, it is stated incompletely, *i.e.*, it is an incomplete symbol, and its apparent object, "doing," "becoming," etc., is fictitious. Stated fully, it constitutes reference to the proposition true of fact, and hence, indirectly to the world of fact; thus the 'ought' element enters merely as a relational term serving to describe the object referred to, and not at all as an object of reference itself.

In a previous article in MIND to which I have already had occasion to refer, I defined negative propositions as descriptions of true propositions in terms of their opposition to some other proposition. Joining to this observation my remarks in the present paper, I desire to call attention to the following points about all three types of propositions, negative, modal, and practical.

(*a*) The adequacy of the concept of description as developed by Mr. Russell within the field of the types of propositions in question. All of the latter, respectively, give the appearance of introducing us to new modes of being such as negative facts, possibilities and probabilities, and doings or becomings. That such modes of being are illegitimate is suggested by first impression and is confirmed by more detailed investigation. Now, by defining these propositions as descriptions, and hence, in their apparent form, as incomplete symbols, we are enabled to apply the philosophic razor to the thread which joins these supposed objects to reality, and by an appropriate interpretation of the propositions we are permitted to exhibit them as referring to true propositions, and hence indirectly to facts.

(*b*) The rôle of propositions as terms of reference. A factual proposition asserts—refers to—fact; in this sense, it may be characterised as a description or a sign of fact. Hence, negative, modal, and practical propositions, *qua* descriptions of propositions, may be defined as descriptions of descriptions, as signs of signs, or, in old-fashioned terminology, as ideas of ideas. Here we have definite use of the rather unfamiliar notion of reference to propositions, as contrasted with reference to given things or facts. Thus, from the point of view of knowledge, given any assertion of a proposition of the types in question, there is a relative emancipation from the "external world" and a restriction to the world of "content," or, of propositions, as the field of reference.

VI.—CASSANDRA'S APOLOGIA.

By F. C. S. Schiller.

Woe is me, alas, alas! Oh that I had never met you, or had never gained from you the baleful gift of prophecy! Oh that these eyes might once more be blind to the impending doom of sacred Ilium and the fall of Priam's kingly house! Surely it is better for mortals not to get what they most desire nor to have prescience of the future they seek to know so eagerly!

Yes, my dear Cassandra, I thought you would soon begin to regret the way you tricked me. But it is no use your making up to me now. Your repentance is too late. The gifts of a god are irrevocable, and even if I would I could not change the past. You will continue to foresee the evils you will be powerless to avert.

Woe is me, what shall I do?

You had better betake yourself to a wholly contemplative life, and devote yourself to the prevision of eternal truth which you are privileged to behold. I admit that the life of action is more fun, but I sometimes think it would be better, even for us gods, to become just contemplators of all time and all existence and to cease from interfering with the order of the world, whether to reward or to punish mortals. Anyhow the vision of Truth should be enough for you.

Even though it makes me wretched?

Not all visions are beatific; or rather the vision of a god alone is that. But this you would not see when you beheld me. So it serves you right. You are justly doomed to foresee the hideous truth, but whatever you predict, it will never be believed. Hence your prevision will be vain. If that annoys you, as I see it may, you can become indifferent to what is fated, and take delight merely in your prescience of it. That is how we gods, and Professor Alexander, 'enjoy' whatever happens.

But how can I, being mortal, become indifferent to mortal woes?

That is your look-out. I am merely telling you that you can make your prescience painless and your life endurable by imitating me. After all, as you can now no doubt foresee, I am merely telling you, what Aristotle is going to prove, in another 1000 years or so, that the best life for mortals to lead is that which apes that of the immortals as far as may be, however vainly.

No, I will *not* imitate you. You are horrid. I would rather die a thousand deaths than live like you. I detest you, and I do not believe a word you say! Why should I believe the atrocious vision you have conjured up before my eyes by some unholy magic? How do I know it is true? How do I know that you have not been trying to deceive me in this matter also? How do I know your gift is not an illusion and your promise false?

When a god swears by Styx his promises are kept to the very letter. If you will not now believe me, you will have to later on. See, and wait, until what you have seen has come to pass.

What precisely has been promised me? Do tell me again; for at the time I hardly grasped what you said.

I promised you that whatever you prophesied should come true, but, to rebuke your insolence, I added that, whatever you prophesied, no one should believe you.

I can understand that at first they might not believe me, if I prophesied unpleasant things. Men are always reluctant to believe in the coming of evils, especially if they themselves have brought them about. But if my prophecies came true and they had frequently experienced this, how could they help believing?

They would not, I tell you, however often you succeeded. Experience would make no difference.

How is that possible?

They would be under a necessity of thought, stronger than any fact, to think that false which you had asserted to be true.

But would not that be belief in necessary error? How very strange!

No stranger than the belief in necessary truth.

Well it seems to me very queer. But tell me, Apollo, should *I* be under the same necessity myself? Should I too think false what I myself had prophesied?

I had not considered this point—which would you prefer?

I do not think that you need consider *my* feelings; the point is that whatever you say *you* will get into a difficulty.

Nonsense! How?

Well, unless I too did not believe that what I said was true, you would be convicted of having promised falsely, and this you swore by Styx you would not do. For it would not then be true that no one at all believed what I prophesied. You will have therefore to make an exception in my favour.

I will do no such thing. I had better say that what you prophesy will be true whether you think it so or not, and so even if you think it false. For your thinking it can make no difference to the truth.

That sounds well, but I am not so sure about it. At any rate, I wish you would tell me how I can at the same time both believe that what I prophesy is false and know that it will come true?

Is not belief different in kind from knowledge? You *know* the truth, but *believe* the false. Where then is the difficulty?

'Knowledge' only seems to me to be a confident belief that is not doubted: I wish therefore that you would prove to me what is the difference between them and how a belief may be known to be knowledge.

Gods never prove anything; it would be most undignified. They only speak with divine authority. If you want proofs you will have to foresee those of Plato, the divinest of philosophers, or the most philosophic of divines, and moreover (probably) a son of mine!

That does not satisfy me, but before I inquire further, let me thank you for the great privilege your gift bestows. I shall now be able to lie as much as ever I please. It will be great fun.

What do you mean?

Did you not say that whatever I said should come true?

I did.

Well then whatever I say *thinking it false* will come true nevertheless?

Certainly.

Then I can *lie* with entire impunity.

I do not understand you.

Pardon my lapse into our barbarous Phrygian. But I do not think there is any Greek word to express what I meant, namely to say what is false willingly and knowing it to be false. Do you not see what an enormous difference this makes?

I do not see that it makes any. What you say is either true or not, whatever you think about it. There is no third possibility, is there?

I suppose not.

You seemed to me therefore to be speaking nonsense when you said just now that you would be able to prophesy false things as much as you pleased. You could not prophesy falsely. You could only prophesy truly. It would be impossible for you to utter what you call a 'lie'. Nor could you do so with impunity; you would always be punished for spreading false news—because no one would believe you.

What an intellectualist you are, Apollo! I am afraid that though you are a god and love some Trojans, you are very Greek at bottom. Are you not entirely leaving out the speaker in arguing about the spoken word? Do you really think it makes no difference what *he* thinks about the truth or falsehood of what he says?

Most certainly. None at least that it is reasonable to take account of.

Then you think it makes no difference whether I prophesy what I believe to be true or what I believe to be false, if only it comes true? Nor again whether I prophesy what is false voluntarily or involuntarily, so long as it does not come true?

In either case the true is true and the false is false.

Then you do not care whether an error is voluntary or involuntary?

I care only whether it is great or small.

And you do not resent the attempt to deceive you which the liar makes?

Whoever speaks falsely deceives me, if I believe him.

You are at any rate a consistent intellectualist, Apollo.

The reasonable are always consistent.

Ah, but are the consistent always reasonable?

Being a woman, Cassandra, you naturally do not admire the logical virtues.

At any rate I should like to ask your opinion about a further question.

What is it?

Have you not given me the power in certain cases to make what is false true, simply by declaring it true, and in others to make it true, by declaring it false?

Why should I listen to such nonsense, seeing that not even a god has the power of making the false true?

If you will listen nevertheless, you will I think understand my difficulty. Is it not possible to tell a sick man he is going to get well, without believing this?

Certainly, even my son Asklepios often says this.

Well then, may not the giving of this assurance sometimes so encourage the patient as to enable him to recover?

Possibly.

Yet he would have died, if he had not received this assurance?

Probably.

Then the assurance being false would have made true what would otherwise have been false, simply by declaring it true?

My son would say it was not by his assurance but either by his superhuman skill, or by a miracle, that his patient was cured.

Again, may not a wicked physician frighten a patient to death by telling him he is certain to die?

If he is fool enough to believe a doctor!

Nevertheless in this case too his belief will make a difference to the truth.

I suppose I can escape from admitting this by telling you that all is fated and no man can escape his fate.

Is that what you are going to tell me?

No, I had rather let you go on.

Very well then, do you not think that if you prophesied that the harvest will be bad, or again that it will be good, and if men believed you, the price of food will be raised or lowered in the markets?

I dare say, but you cannot expect a god to concern himself with market prices.

But you say you are concerned about the truth, and in all these cases the truth does seem to be affected by what men believe about it. The belief that something will happen seems to make it happen, or else to make people take measures to frustrate it.

At any rate, Cassandra, *you* cannot make things happen in this way. For whatever you say you will not be believed.

I cannot perhaps make the false true by declaring it true and getting men to believe it true. But does it follow that I cannot make the false true by declaring it false and so getting men to believe it true?

I should think it did. If you cannot make the false true by declaring it true, how can you by declaring it false?

You must remember that you have promised me that I shall always be disbelieved. Hence by prophesying one thing I can make men believe the opposite. If I prophesy a scarcity, they will believe in an abundant harvest; so they will sell me their corn, believing that the price will go down. But as the harvest will be bad, I shall be able to re-sell it for much gold when my despised prophecy comes true. Thus I shall be able not only to make that come true which I believe to be false but declare true, but I can also get the others to believe true the opposite of this which I shall seem to them to have declared false.

I did not understand. Only a devil, not a god, could follow all this.

Surely, Apollo, my point is simple enough for a child to follow. If whatever I predict is disbelieved, I can in certain cases foresee that what will be believed will be the opposite of what I predict. I know also that what all believe is false. If therefore I act *as if* what is universally believed true is false and *as if* what is believed false is true, I shall be prepared for what will happen, and can guide my life by always behaving as if that were false which all believe to be true.

Such was not the use I intended you to make of my gift.

Perhaps you did not understand what you were doing, and do not understand even yet what I am intending to do.

I understand at least, that you intend to set at naught the punishment I inflicted.

Does it come to so much as that?

Yes, for by acting as if what you believe true were false, and what you believe false true, you would be escaping all the evil consequences of your false beliefs.

Well, why shouldn't I?

Because it makes me doubt whether you really believe the false things you say you believe, and disbelieve the truths you predict.

Why should you disbelieve what I say?

Because you *act* so differently. And I suspect that your acts are better witnesses to your beliefs than your words. For it is easier to deceive by words than by deeds.

It seems to me, Apollo, that you are now speaking like a pragmatist.

What is that?

Oh, something that no one will understand for ever so long, for another 3000 years at least. And when they understand it, men will say that it is nothing new and that they have always been pragmatists.

Then talking pragmatism must be very like talking prose. I remember I once asked Momus to tell me what that meant.

And he replied, I suppose, that it was what you always did, especially in your oracular hexameters?

Your impertinence equals his. Have you already forgotten the woes that are in store for you? If so, may I trouble you to turn your prophetic eye upon your latter end, and to foresee by what a death you are fated to perish? It is better for mortals to meditate upon such things than to bandy words with gods.

It is easier at any rate. But I was not unaware, even before my eyes were opened, how piteous is the lot of mortals. I shall suffer as bravely as Prometheus. And I divined also that you gods were merciless and had no human feelings. That is why I spurned your 'love'.

Like the silly girl you are! Had you not done so, you might have escaped from the doom of Troy. Had you continued to please me, I might have made you an immortal, or if not, at least have turned you into an evergreen, like dear Daphne, which is the next best thing.

I had no thought of escaping my doom. But do not you gods too think of your future?

No, of course not. We live lightly, in the present, knowing that the future holds no terrors for us.

Then the fate I shall prophesy will be news to you?

If it is new, it will not be true.

Nevertheless it may be unpleasant.

Nonsense.

Shall I prophesy?

If it amuses you.

Well then I prophesy that you too will be changed—into a butterfly, Apollo,[1] but will still remain Parnassian, and haunt the mountain tops.

Do you expect me to believe that?

Certainly not; but it will come true. However it may console you to learn that you will still be beautiful.

Thank you for that! If I believed you, I should say that so long as I remain beautiful I am still Apollo. And I suppose that even though I became a butterfly on Parnassus I should still remain a god on Olympus.

There will be no gods left on Olympus and the rest will fare worse than you.

I must say, Cassandra, that though of course I know your prophecies are jokes, they are in the worst possible taste. Go home to my temple and devote yourself to your priestly functions. I am sure my sacred image has not been dusted for a week.

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[1] *Parnassius Apollo.*

VII.—DISCUSSION.

"ACTIVITY"—A VITAL PROBLEM.

The term "Activity," so often on men's lips, has not yet received that full attention which its importance demands. Bradley comments on this fact in *Appearance and Reality*. Here is a topic meriting most patient consideration on the part of philosophers. Nevertheless too many writers use the word "activity" as if the meaning associated with it were too obvious to need defining. Thus in Prof. Merrington's recently published and interesting work, *The Problem of Personality*, the "*self-activity*" of the "Ego" is one of the author's most cherished beliefs; the reader is not allowed, withal, to perceive clearly for what the verbal symbol, treated with such respect, actually stands. What Eucken means by "activity" seems equally obscure.

The time has come for a searching discussion elucidating this concept. Consider the conflicting interpretations of "activity" which such writers as deign to consider it offer us. Some, *e.g.*, say that "Activity" is a way of thinking which implies time-succession; others deny that time-succession is necessarily involved. Some treat it as a subordinate and even 'contradictory' category of *finite* thought; others hold that it indicates the character of Total Ultimate Reality; that, when we use it, we are asserting truly about that which is independent of our thinking, that which is presupposed by the possibility of assertion itself.

In Kant's *Critique of P.R.* "Activity" does not show in the familiar table of Categories; it is a deduced or derived pure judging concept subordinate to the much-discussed category of Causality. This view makes "activity" valid only *within* experience, as this latter is understood by the narrow idealism of Kant. But a grave difficulty confronts the Kantian. Kant's attitude *presupposes* a "synthetic activity," shaping the discrete primal 'manifold' into our category-shot unified experience. "Activity," then, is not merely a category valid *within* experience—*it lies somehow at the very roots of it!* In the Hegelian system "Activity" is a subordinate category or thought-determination comprised within the organised totality of "Reason"—the IDEA. But the trouble is that this IDEA strikes one, not merely as *comprising* the category, *but as itself, throughout its entire extent, active!* It accomplishes, we learn, a "labour of creation," and we are told also in the *Philosophy of History* that the IDEA is at once the "substance" and the "infinite *energy*" of the Universe, since Reason is not so *powerless* as to be incapable of *producing* anything but a mere ideal, a mere intention. The IDEA, indeed, is the "absolutely *powerful* essence". Utterances such as these carry us back to the Leibnitzian contention, to wit that all that is real *acts*. The Hegelian IDEA, it would seem, is a philosophical instance of ἐνέργεια ἀκινησίας; that phrase which Dr. Schiller has revived and used with excellent effect to denote "activity" which is unaccompanied by real change.

An important legacy bequeathed by Fichte to modern thought is an idealism which (does not merely deduce a category of "activity," but) *rests utterly on a* cosmic "*infinite activity*". Fichte's view was suggested, perhaps, by the defect in Kant's thinking previously noted, viz.: that Kant's entire account of experience presupposes "activity" which cannot, therefore, be regarded as a thought valid merely *within* finite thinking. Fichte, in fine, regarded "activity" as basic; a fact which must have borne fruit in his later inclination to treat the Ground of appearances as *Will*. This *Will*, which we meet again in the works of Schopenhauer, is ἐνέργεια ἀκινησίας; neither Fichte nor Schopenhauer favouring the view that change or time-succession is a mode of Ultimate Reality.

Dr. Schiller has supplied us with an interpretation of "Activity," which cannot be overlooked, in his monadist pluralism of *Riddles of the Sphinx*.[1] I have furnished another in connexion with the hypothesis that the Ground of appearances is best discussed as Imagining (*World as Imagination*, p. 187 *et seq.*). Both interpretations regard the Universe as activity, "a sum total of Actions and Activities" as Carlyle, influenced by Fichte, called it. The concepts differ considerably with the differing contexts to which they are applied, and in which alone they possess meaning. Both are submitted simply as experiments such as serve to justify Pragmatism when used as a Method; are truth-claims proferred for 'testing' and to be discarded at need without ceremony?

I have nothing fresh to say about "Activity" in this letter. My main wish is to draw attention once more to the opinion of Bradley that "Activity" has not received that full treatment which is due to it from philosophers. Seeing that this concept lies at the base of several historic systems of thought and is certainly of importance, as interpreted by enterprising spirits in our midst to-day, attempts to elucidate its meaning seem desirable indeed. At present we can note writers who condemn Leibnitz' appeal to "Activity," and yet others who follow Leibnitz and Fichte in treating the concept as fundamental. Are we prepared to pass final judgment on the rival contentions?

[1] Another great pragmatist, William James, has dealt with "Activity" in his *Problems of Philosophy*, less ambitiously. James considers that the word has no meaning outside our experiences of "process, obstruction, striving, strain, or release". Schiller, on the other hand, regards "Activity" with the wide metaphysical interest of a Leibnitz or Fichte as presupposed by the total experienced cosmic process.

E. D. FAWCETT.

VIII.—CRITICAL NOTICES.

On Causation and Belief. By CHARLES A. MERCIER, M.D., F.R.C,P., F,R.C.S. London: Longmans, Green & Co, 1916. Pp. xii, 228.

"EVERY one," says Dr. Mercier, "has an approximate notion, good enough for most working purposes, of what is meant by causation and by cause and effect, but no one has been able to put that notion into a verbal expression that will stand criticism". Dr. Mercier's chief aim in the present work is to supply this lack—to "define causation in consistent and intelligible terms". His procedure is partly critical and partly constructive. In chapter i.—"Some Theories of Causation"—he gives a somewhat perfunctory consideration to views of Hume, Mill, Mr. Welton, Prof. Pearson, Mr. Bertrand Russell and Dr. McTaggart, and disposes of all of them except Mill in a summary fashion. Chapters ii. to vii. are chiefly occupied with attacks on Mill's account of Cause, Effect, Condition, Causation, the Methods of Experimental Inquiry (the *pièce de résistance*), and the emendations which Dr. Mercier offers. He proposes to define causation as the Relating Relation between cause and effect. An effect is "a change connected with a preceding action, or an unchange [= prevention of change] connected with an accompanying action, on a thing". Nothing is here said about necessity of connexion—so a mere sequence or simultaneity in time, or mere conjunction in space, would satisfy the definition. Cause is defined as "an action (or cessation of action) connected with a sequent change or accompanying unchange of the thing acted on". The term *Connexion* is here again open to the objecttion hinted above. Then, how are we to distinguish between action on a thing, and the sequent change (*i.e.*, the effect) in the thing acted on? Take the action of pressing a seal on hot sealing wax. How separate between action and effect here? Cause and effect appear to be simultaneous, and the effect is due just as much to the reaction of the wax as to the pressure of the seal upon it. We are here within view of the difficulty which has led to the 'identity' theory of cause and effect. We seem not so much to have actions followed by effects (= changes in the thing acted upon) as "a peculiar conjunction of agents," S and W—from which the consequence or effect (the Impression of the Seal in the Wax) results—*as soon as* we have the "peculiar conjunction of agents" S and W, we have also the effect, namely the Impression imparted by the Seal and accepted by the Wax.

Passing to Condition (chapter iii.), we are told that "a condition has never hitherto been satisfactorily distinguished from a cause. The true distinction is that a cause is an action, a condition a passive state . . . of or about the thing acted on by the cause and material to the effect" (p. 60). The difficulties recur of calling a cause simply an action (while an effect has been explained to be a change *in a thing*). "Of or about" seems not free from ambiguity, and the requirement that a condition should be a passive state, introduces the question of the relation between active and passive. What is a passive state of the thing acted upon by a cause, and reacting to it? What, again, is a passive state 'about' this thing? Some of the above difficulties would be escaped by accepting Mill's not incompatible dicta (1) that the cause is the sum total of the conditions, and (2) that it is the peculiar conjunction of agents from which the consequence results. These conditions may be positive or negative and include absence as well as presence of 'agents'. If the sum of conditions is Cause, any condition may be emphasised as pre-eminent, and for the purpose in hand be singled out as Cause (see below).

In chapter v. Dr. Mercier takes up a strongly Pragmatist attitude, and he does it very effectively—but it leads him up to, or near to, one of the theories of causation which he has repudiated in chapter i.—the view namely that before we can determine the cause of anything, we need to have a knowledge of the whole universe. He says that of all the "different series of innumerable causes both direct and indirect it is usual to select one, and to call it *the* cause. On what principle is this selection made? What, for instance, is the cause of the kettle boiling over? The action of the fire, says the master. Leaving the kettle too long on the fire, says the mistress. The neglect of the kitchen-maid, says the cook. The cook sending me upstairs, says the kitchen-maid. The cook's forgetfulness in leaving her apron upstairs says the housekeeper. Every one of them is right. Each of these is a cause; but which is *the* cause?"—"What then should, and what does determine us in fixing upon one of the innumerable causes of an effect and calling it *the* cause? It depends entirely upon the purpose in view." Compare Mill's reference to the capricious manner in which we select from among the conditions that which we choose to denominate the cause.

As a result of the discussion in chapter iv. (Causation), we reach the following definition of Causation: "Causation is the necessary connexion between an action and the sequent change or accompanying unchange in the thing acted on". (It is to be noted that the connexion between the terms of the relation is here said to be 'necessary'.)

The objections remain to calling a cause an *action* simply, and to speaking of the cause of an unchange as contemporaneous with it, while the cause of a change is held to precede it. The time difficulty cannot be so simply disposed of.

In chapter vi. Dr. Mercier criticises Mill's Methods of Experimental [Experiential] Inquiry, and offers instead a list of twelve other Methods of Ascertaining Causation, which he says are used by scientific men in scientific matters and also by every one else in the common affairs of daily life (p. 146).

"The methods so clumsily and uncouthly described by Mill (he says) are in fact never employed; they never could be employed, for they are absurd and when applied to actual cases result in futility" (p. 103).

Mill's Methods, we may observe, are methods of proving some case (or cases) of Causation. *E.g.*, I put a lump of sugar into a cup containing Coffee and Milk, and find that Sweetness has been added to the flavour of the mixture. So by the method of Difference I reach the conclusion that *Sugar is in this case a cause of Sweetness.* This conclusion will furnish the *Minor* Premiss of an 'Inductive' Syllogism which has the Law of Causation for *Major* Premiss: thus

> What is once Cause of Sweetness is always Cause of Sweetness;
> Sugar is once Cause of Sweetness—

and there follows in conclusion the general statement:

> ∴ Sugar is always Cause of Sweetness.

But the Methods may incidentally be, and in fact often are, instruments of discovery—of ascertainment, especially the Method of Difference, and the allied Methods of Concomitant Variations and of Residues; *e.g.*, the first time I make the experiment of putting sugar into my coffee, I discover as well as prove that Sugar is a Cause of Sweetness. Again, it is by the Method of Residues (by which, Dr. Mercier says, "no cause of anything has ever yet been discovered") that the weight of a load of coal is determined—the loaded waggon is run on to the weighing machine, and the whole is found to weigh 1 ton, 10 cwt. The waggon is known beforehand to weigh 10 cwt., hence it is inferrible that the remaining weight is caused by the other factor, the coal. Thus, by the Method of Residues we both discover and prove the weight of the coal. Illustrations from everyday life might be multiplied indefinitely.

"When a china cup falls to the ground (Dr. Mercier says, p. 104) and breaks at the instant of its impact on the ground, we do not need to witness 'two or more instances in which the phenomenon occurs,' or [?and] 'two or more instances in which the phenomenon does not occur,' before we can make up our minds that the action of the impact was the cause of the breakage." Certainly not. We have in this case a typical instance of the Method of *Difference* and *not* of the Joint Method of Agreement and Difference from the Canon of which Dr. Mercier (not quite accurately) quotes.[1]

It may be admitted that Mill's Canons are clumsily and even inaccurately stated; but his own illustrations give the clue to a better statement, and for anyone who brings to their interpretation not only intelligence, but also a desire to get at the meaning, it is not difficult to arrive at their methodological value and intention.

In chapter v., under the heading 'The Uniformity of Nature,' Dr. Mercier observes (p. 101) that "The Law of the Uniformity of Nature as stated in the books is nonsense. Neither the same[2] cause nor the same[2] effect is ever repeated;" and he propounds the following Axiom of Causation: "Like actions on like things in like conditions produce like effects,"[3] and adds to this the aphorism that: "The more nearly alike the actions, the things acted on, and the conditions, the more closely alike will the effects be". Briefly: "Like causes in like conditions produce like effects" (p. 99). This is "the true axiom of Causation". On it "almost all our reasonings with respect to Causation are founded" (p. 101). The statement that *Like causes produce like effects* is familiar, but limited and qualified as it is by Dr. Mercier, it presents peculiar difficulties. According to him, to say that we can have *same causes, i.e.*, I suppose any two causes precisely or indistinguishably alike, is 'nonsense,' since we never have two causes the *same*. Yet "the more nearly alike the actions, the things acted on, and the conditions, the more closely alike will the effects be". What is the greatest degree of likeness (or similarity) that is yet *not* exact likeness? Are we to depend on general unanalysed likeness, or likeness point for point? And if there is any likeness whatever, must there not be some element of exact likeness? On how slight a degree of likeness between two causes may we build the expectation of corresponding likeness in their effects? What we need, says Dr. Mercier in one place (p. 112) is that the causes should be "like enough". Yes of course—but what we want to know is, what degree of likeness *is* 'enough'? Sometimes one has to admit that an exceedingly small difference in the cause may produce quite enormous differences in the effect. On the hundredth part of an inch to the right or the left, it may depend whether a wound is negligible or fatal—or whether it produces merely temporary muscular paralysis, or permanent mental disablement. At other times one finds that causes which are extravagantly different, produce effects indistinguishably alike—as, *e.g.*, in the perfumes and crystals produced sometimes by 'natural' causes and sometimes by 'synthetic chemistry'.

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[1] Dr. Mercier observes that Mill "enumerates five Methods of Experimental Inquiry, and he calls them four, and in seventy years not one of his commentators has discovered the inaccuracy". But in fact attention is drawn to the discrepancy in my *Primer of Logic*, p. 69, note.

[2] I presume that by *same* here, Dr. Mercier means precisely similar, *qualitatively* the same.

[3] On p. 108, Dr. Mercier says that from the Axiom, "Like causes in like conditions produce like effects," we obtain "the immediate inference that: Like effects in like conditions are due to like Causes" by "a logical process that is unknown to logicians". May I point out that inferences of this kind are considered, *e.g.*, on pp. 38-40 of my *Primer of Logic?*

The twelve Methods of Ascertaining Causation which Dr. Mercier proposes to substitute for Mill's Methods are as follows :—

I. Instant Sequence.
II. Subsumption under a general law.
III. Assimilation (or Similarity, p. 108).
IV. Association :
  A. When sole or isolable.
V. B. When constant.
VI. C. When too frequent to be casual.
VII. D. When attended by a constant peculiarity in the effect.
VIII. Concurrent and Proportional Variation.
IX. Common Rarity.
X. Corresponding Qualities.
XI. Coincidence of Area.
XII. Coincidence in Time.

"As all but three of these (he says) are founded on the Axiom of Causation, separate discrimination of any but these three [*viz.*, I., IV., and XII.] is to some extent artificial."

I. In Instant Sequence, "where an action upon a thing is instantly followed by a change in that thing, we are irresistibly driven to conclude that the action is the cause of the change". The examples of this Method given by Dr. Mercier, pp. 104, 105, are typical cases of Mill's Method of Difference; but the inference to causation depends not on instant sequence (which is not essential to that Method), but on limitation of the circumstances introduced prior to the change in question. "Of course the method [of Instant Sequence] is not infallible," Dr. Mercier says. Of course it is not. It is, in fact, *as a Method of mere Instant Sequence* entirely untrustworthy. In the tropics, there is 'instant sequence' between day and night. In a 'near' thunderstorm, there is 'instant sequence' of the thunder on the lightning, but we cannot hence conclude causal sequence in either case.

II. "The second Method of establishing a causal connexion between an action and an effect is by subsuming the instance in hand under a general law." It would seem that if we have a general law, the causal connexion has been already established. If we know the general law that water expands when it freezes, we also know the cause of our frozen water-pipes bursting. (The agent which acts on the water is the surrounding medium, at a given temperature.) Before cases or laws can be subsumed, both the cases and laws subsumed, and the laws under which they are subsumed, must have been *ascertained*. Subsumption is reckoned by Mill, and other writers, as a mode of explanation—of linking or systematising facts and laws already ascertained—a mode of collecting particulars under an already ascertained law, which they exemplify, not a method of ascertaining causal connexion. Every 'Inductive' Syllogism expresses such a Subsumption. But some of the cases which Dr. Mercier instances here, *e.g.*, the action of the moon upon the seas, or the reasoning of the cook who misses a jam-pot from her cupboard, seem to involve a good deal more than what is ordinarily understood as Subsumption.

III. The Method of Subsumption is said to merge into the next, *i.e.* (III.) "the Similarity of the case in hand to other cases in which the causation has been ascertained". This Method is said to be simply an application of the Axiom that Like Causes in like conditions produce like effects.

This Method of *Similarity* (*Sameness* is excluded) seems to me to be a Method of getting *suggestions* of possible connexions of cause and effect, which suggestions are afterwards tested in some other way, probably by one of Mill's Four (or Five) Methods. It is not by Similarity that the cook is convinced that her missing jam-pot was taken by the page-boy. She finds by Method of Residues that the absence of one pot is unaccounted for, and then she ascertains, perhaps by cross-questioning, that the page and no one else had access to the cupboard at the time when the jam vanished. So she plausibly assigns the residual pot to the residual agent—thus: 7 pots gone, 6 pots given out by cook—residual effect, 1 pot gone—residual cause (subsequently arrived at) page-boy at the cupboard. In the investigation referred to (pp. 110, 111) of the cause of yellow fever, disease in tomatoes, etc., *similarity* to ague and potato disease respectively may *suggest* similarity of cause and therefore Similarity of remedy in the two cases, but the suggestion has to be tested by experiment—by the Method of Difference, of Residues, or Concomitant Variations.

Method IV. Association when sole or isolable (A).

The maxim of this Method is given, p. 119 (see also p. 120), and runs as follows:—

"If in given conditions, other material things remaining the same, the addition alone of an action is attended by an effect, or the withdrawal alone of an action is attended by the disappearance of an effect, that action is the cause of that effect in those conditions". Further (p. 120) if "the action can be isolated and added or withdrawn without disturbing other material actions or conditions, then a single instance[1] is all that is necessary to establish causation, not only for that instance but generally for all cases that are similar in material respects". This is obviously the Method that is generally regarded as the Method of Difference, and the illustrations from the Torricellian barometer, the baby's crying, the wilting of a cutting in the greenhouse, are typical cases of the application of that Method.

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[1] It is of course not from a single instance but from the Positive and Negative instances considered together that the inference is drawn.

Method V. Association when Constant (B).

"When the Association of an action with an effect though not isolable is yet of proved constancy, causal connexion between the action and the effect may be presumed. . . . Constant association between an action and an effect may be association in presence, that is to say that if one is present the other also is present [this is Mill's Method of Agreement]; or it may be association in absence, that is to say that if one is absent the other also is absent. In practice these amount to the same thing." The second alternative is the Method of Agreement in Absence, and the two forms taken together constitute Mill's so-called Joint Method.

Methods VI. and VII. Association (C), (1), and Association (D), (2), are cases of Agreement,—(1) "in certain conditions" (p. 125), and (2) "when the effect has a certain quality" (p. 127). Many of the remarks on these special cases of Association are interesting and acute. It is a little difficult to see why Association, *i.e.*, Association of Cause and Effect, should be set out as *a separate* method of ascertainment, since there could not possibly be any case of Causation in which Cause and Effect are not associated—consider Methods I. to III. and VIII. to XII. which comprise the Methods not included under Association.

Method VIII. Concurrent and Proportional Variation.

"Causal Connexion may be established by the discovery of concurrent and proportional variation of action and effect; and is the more warrantable the closer the concurrence and the more exact the proportion." This method "replaces Mill's Method of Concomitant Variations," and Dr. Mercier's maxim of it is perhaps, in some respects, preferable to Mill's Canon, but in essentials, in intention, the Methods are the same.

Method IX. Common Rarity.

"If an unusual effect is associated with an unusual action, we are apt to assume a causal connexion between them, and the assumption has the more justification the more unusual both the action and the effect are." *E.g.*, "In sparsely populated countries the advent of a visitor is a rare occurrence. If, after such an occurrence an object is found to be missing, and this also is a rare occurrence, causal connexion between the occurrences will be presumed on the ground of their common rarity." This 'Method' seems to me to be trivial, superfluous and untrustworthy.

Method X. Corresponding Qualities.

"Any peculiar quality in an effect points to a corresponding quality in the agent that produces the effect." This 'Method' suggests considerations that may be valuable as hints, but that would mostly need to be corroborated by some more rigorous procedure. In the case of the print in the sand, recognised by Robinson Crusoe as the print of a human foot, it may be said that unless Robinson Crusoe had already known that a man's bare foot would produce such an impression, he might have been very much at a loss. The first sight of a footprint may be not at all suggestive of the cause—let alone proving it.

Method XI. Coincidence in Area.

"If an action has taken place on a certain area of a thing, and if subsequently a certain effect is found to be precisely limited to that area, then we may confidently presume that that action was the cause of that effect." The action instanced of a picture hung on a wall, and the resulting difference in colour between the bit of wall covered and the surrounding area, seems to be rather a case of 'unchange' as previously defined. Dr. Mercier appears to give up in this case (see p. 139 and compare p. 142) the distinction between conditions and cause so much insisted on previously.

In this Method it would seem that Time ought to be as much taken into account as Area. The illustrations given of physiological and bacteriological experiment are cases of the Method of Difference, and in fact on page 145 Dr. Mercier says that this Method may be called "a case in which the addition alone of an action is followed by an effect, or the withdrawal alone of an action is followed by the disappearance of an effect". (See above.)

Method XII. Coincidence in Time.

This Method it is said is "limited to the discovery of the causation of those effects that are unchanges". But surely Coincidence in Time by itself neither discovers nor proves anything at all. It is clear from Dr. Mercier's own illustrations that Coincidence in Time needs to be supplemented by Coincidence in Space, and some of those illustrations, *e.g.*, that about the noise caused by the motion of machinery, seem to be simple cases of Method of Difference—and all the examples cited seem to me to be examples of Change not of Unchange (pp. 141, 142).

Dr. Mercier's enumeration (for it is not a classification) of Methods is lengthy and awkwardly arranged (even the number is doubtful) and by his own admission is unsystematic, arbitrary and artificial. It would have been possible, he says, to diminish the number, or on the other hand to increase it (p. 146). All but three, he says—*viz.*, I. Instant Sequence, IV. (*a*) Association when Sole or Isolable, XII. Coincidence in Time, are founded on his Axiom of Causation, "Like causes in like conditions produce like effects". Of these three, mere Instant Sequence can be neither defined nor depended on. Coincidence in Time by itself does not discover or prove anything whatever. Sole or isolable Association, when examined, appears to have the closest possible dependence on a Law of Causation. The Methods said to be founded on Dr. Mercier's Axiom of Causation, in as far as they are so, necessarily suffer from the defects of that Axiom—besides other defects to which attention has been already drawn.

The unsympathetic violence of Dr. Mercier's attack on Mill may be to some extent condoned because of its sincerity, and there is a measure of justification for some of his criticisms. But it is impossible to accept as improvements the changes which he suggests in the definitions of Cause, Effect, Condition, Causation, etc., and in particular the list of Methods of Ascertaining Causes which he puts forward in chapter vi.

Chapter viii. on Causes of Death and Causes of Insanity is a vigorous Postscript to what precedes, and the concluding chapter —On Belief—is a sort of Appendix. Both these chapters are well worth reading. The chapter on Belief especially is, on the whole, very keen, wise and practical.

E. E. C. JONES.

A History of Mediæval Jewish Philosophy. By ISAAC HUSIK. The Macmillan Company, 1916. Pp. i, 462.

DR. HUSIK has rendered a useful service to students of the history of philosophy by putting together this convenient and clearly written account of the Jewish thinkers of the middle ages. The course of mediæval speculation cannot be properly understood without taking into consideration the contribution of the Jews; yet by many who are interested in the thought of this period little attention is paid to it; and the present reviewer cannot pretend to more than a superficial acquaintance with one or two of the most prominent among those of whom Dr. Husik writes, so that he must in the main confine himself to calling attention to points of especial interest in the book itself.

In its earlier period the philosophical movement in mediæval Jewry dependent upon that among the neighbouring Mohammedans, especially in the rationalistic sect called the Mu'tazila or Separatists; and there seems little evidence to support the view which has been alleged that this school itself owed its origin to Jewish influences (see pp. xxv-xxvi). The tradition of the Mohammedan schools continued to be dominant in Jewish philosophical literature until, with Maimonides in the thirteenth century, it gave place to the direct influence of Aristotle. Thus it played a part in the development of Jewish thought more or less analogous to that played by the Augustinian version of Platonism in the development of Christian thought in the west during the same period.

Dr. Husik does not begin his history with the encyclopædist Saadia, who is commonly regarded as the patriarch of Jewish philosophy, but with an elder contemporary of his, Isaac Israeli, who was translated into Latin, and in this version known to the Latin schoolmen. He is described as in his general view Neoplatonic and as in his doctrine of the soul attempting to reconcile Plato and Aristotle (Dr. Husik, by the way, in what he says here seems to overlook Aristotle's statement, *de Gen. An.* ii. 3, 736 b. 28, that the Intelligence, the highest element in the human soul, enters it *θυράθεν*, from without). Saadia (892-942) is, however, described as, after Philo, who belongs to another epoch altogether, the first important Jewish philosopher. He is also reckoned as the first Hebrew grammarian and lexicographer. Dr. Husik seems on the whole to make out that Saadia did not know Aristotle, even in translations, at first hand; though one reason which he gives in support of this thesis would go to prove the same of Francis Bacon. Saadia's theology was determined by his polemic against the Christian doctrine of the Trinity. Life, Omnipotence, Omniscience are indeed, he holds, God's chief attributes, but, if they are to be made into 'persons' why not other attributes also? Neither these nor any other attributes of God are really distinct from one another or from the divine essence. (There is in this last statement nothing which the Christian schoolmen would have denied, but they would not have considered it inconsistent with Trinitarianism.) On another point, to which the mediæval Jewish thinkers devoted especial attention, that of the freedom of the human will in respect of divine foreknowledge, Saadia taught that man never acted contrary to God's knowledge, not because God determines his acts, but only because God knows what will be the final outcome of man's free deliberation.

The fifth chapter introduces us to Solomon Ibn Gabirol, who lived 1021-1058, and whom Dr. Husik (forgetting Seneca) calls the first Spanish philosopher. His most famous philosophical work, the *Fons Vitæ,* was written in Arabic and translated into Latin by Gundissalinus in the middle of the twelfth century. There is no obvious trace of Judaism in this treatise, which teaches (following in the wake of a Neo-Platonic writer whose work passed under the name of Empedocles) the doctrine of a universal matter underlying all existence other than God's. This matter is itself an emanation from God and forms the basis of all subsequent emanations, celestial or intelligible as well as corporeal, though the matter in the former case is of a different nature, unaffected by quantity, magnitude, figure or colour. A mystic knowledge is attainable of this primal or universal matter, but not even ecstasy can reach to an apprehension of the divine essence—unless, indeed, an enigmatic phrase about seeing in the universal matter 'the wonder of all wonders' (*id mirabilius omni mirabili*) hints at something of the sort. A remarkable feature of Ibn Gabirol's system and one to which may have been due the neglect of the *Fons Vitæ* by his fellow Jews—it was only indeed in quite modern times that the identity of Avicebron, as the Latin schoolmen called him, with the synagogue poet Ibn Gabirol was established—is his doctrine of the Will (Wisdom or Word) of God. This is, as active, distinguished from God, and his language regarding it was sufficiently like that used by Christian theologians of the Second Person of the Trinity to mislead William of Auvergne (Bishop of Paris, 1228-1249) into supposing that the author of the *Fons Vitæ,* though bearing an Arabian name and writing in Arabic, was actually a Christian.

In chapter x. we reach Judah Halevi, also a writer of religious poetry, who was born at Toledo in the last quarter of the eleventh century. Aristotle's doctrine of the eternity of the world, the difficulty of reconciling which with the letter of Scripture, perplexed the Jewish as it did the Christian thinkers of the middle ages, Halevi held might be admitted, if it were really established by reason, without injury to the essence of Judaism. His general attitude to such questions anticipated that of Maimonides. There was, he held, nothing in the Bible which contradicted the unequivocal conclusions of reason; but on some points reason is incompetent to inform us, and with respect to these we are left to revelation. Like several Christian writers of his period (such as Gilbert Crispin and Abelard) Judah ben Halevi composed a dialogue between representatives of philosophy and of the chief positive religions. These are described as called in to advise a king of the Chazars. The Philosopher's views are those of Avicenna. The Jew is made to assert the essential and permanent superiority of Israel to all other nations in regard to the knowledge of God. For though 'Elohim,' the ruler of the world, may be known through reason, Jahveh, the God of revelation, cannot so be known. The believer in revelation loves God and would die for him, while the philosopher only sees in him the greatest of all beings, in his worship only morality and truth, in unbelief only the fault of choosing the untrue in preference to the true. Prophets are superior to philosophers. Only Israelites can be prophets; good and wise men of other nations will have their reward, but the prophet's peculiar nearness to God is a privilege reserved for Israel, the 'heart' of humanity. In connexion with these views Avicenna's doctrines of the Active Intellect and of immortality through knowledge are subjected by Judah ben Halevi to acute criticism.

In chapter xi. we meet with Abraham ben Ezra, who followed Ibn Gabirol without naming him. The view, destructive to any faith in a particular providence, and involving a paradox to which Plato had already in the *Parmenides* called attention, that divine knowledge does not extend to transitory particular facts—a view subsequently controverted by Maimonides with arguments which were adopted from him by St. Thomas Aquinas—was held by Abraham ben Ezra, who drew from it the consequence that the creation of the world could not be due directly to God. It was rather to be ascribed to angels, who are indeed the beings primarily intended by the 'Elohim' of Scripture and in reference to whom the plural expression 'Let us make man in our image' is employed in *Genesis*. (It will be remembered that in this plural the Christians saw a reference to the distinction of Persons within the Godhead.) Ben Ezra did not, however, exclude a particular providence altogether. The good can escape the fates which the course of the stars would have ensured for them, and attract to themselves a special providence which for the majority of men does not exist. Even in the case of these favourites of heaven the natural effect of the stars' courses is produced, but the individual is withdrawn from the domain affected thereby and ultimately absorbed in the World-Soul.

The wicked, on the other hand, are left to the destiny determined for them by the stars. A considerable sphere is allowed by Ben Ezra to natural religion; the obligation of all the ten commandments, except the fourth, is evident to the natural reason; but for the simple Revelation is a necessary supplement thereto.

Abraham Ibn Daud, who is described in chapter xii. was a younger contemporary of Judah ben Halevi, born like him at Toledo, but an opponent of his views, for he believed that religion could be harmonised with philosophy. Accordingly he identifies the Holy Spirit (the inspirer of the prophets) with the Active Intellect (we are reminded of the view attributed to Adam Marsh by Roger Bacon), and recognises angels in the Aristotelian sphere-spirits. As an Aristotelian and no mystic he attacked Ibn Gabirol and anticipated in some respects the position of Maimonides. Like the latter (and like St. Thomas after him) he emphasised the proof of the existence of God from the fact of motion; but the eternity of motion he holds to be excluded by the fourth commandment, and will not even (with Maimonides) allow it to be hypothetically admissible. He expressly denies that individual souls exist before their bodies, but is silent as to their survival; which indeed is difficult to deduce from a theory of immortality based, like his, on the Aristotelian doctrine of the eternity of the νοῦς. On the question of Freedom, in Dr. Husik's opinion, 'Halevi is less consistent and more thorough; Ibn Daud is more consistent, but he fails to take account of real difficulties' (p. 231). He holds that God creates things which are *only* possible not merely in the sense that *we* do not know whether they are actually so or no, but in the sense of the objectively undetermined. The issue in such cases even God does not know; but this is not properly called ignorance on the part of God (presumably because there can be no ignorance where there can be no knowledge).

In chapter xiii. we arrive at the greatest figure in the history of Mediæval Jewish philosophy, Moses ben Maimon or Maimonides. Dr. Husik writes that his reputation for Rabbinical learning led to his philosophy making a much greater impression on the Jewish community than that of his predecessors. It certainly did not owe its success to any undue concessions to religious sentiment. The only point in which Maimonides can be said to be in sympathy with the Neo-Platonic rather than with the Aristotelian tradition is in his use of the 'negative way' of conceiving God, and just in this point the Neo-Platonic tradition removes God from man rather than brings him near. The divine attributes Maimonides will not allow to be more than homonymous with those called by the same name in man. The command to 'love the Lord thy God' cannot be obeyed without a study of the nature of things as a whole, for only thus do we come to know that affection is a defect, to be excluded from our notion of the divine nature. He does, however (as we saw), admit a providence for individuals, though human beings are the only inhabitants of the sublunary world that enjoy its care, and they in various degrees. He would not have allowed that 'not a sparrow falleth to the ground without your Father'. He is the enemy of all arbitrariness in religion. The laws of sacrifice are thus regarded as of merely temporary use; they were only ordained in order to wean the Hebrews who had been accustomed to offer sacrifice to the stars from that idolatrous worship (in which Abraham was supposed by Maimonides to have been bred, and the 'Sabæans' still to practise). This view of the origin of the sacrificial system of the Old Testament is found, by way, in some of the Christian fathers, *e.g.*, Jerome and Augustine.

We have already noticed the use made of Maimonides (whose *Guide of the Perplexed* was translated into Latin not long after its composition) by St. Thomas Aquinas. Dr. Husik estimates the debt of Latin scholasticism to the great Rabbi very fairly on pages 306, 307: 'There is no doubt,' as he says, 'that the method of harmonising Aristotelian doctrine with traditional teaching so far as the common elements of Judaism and Christianity were concerned was suggested to Aquinas by his Jewish predecessor.'

Down to the time of Maimonides the thinkers of mediæval Jewry with only one or two comparatively unimportant exceptions, wrote in Arabic, as did Maimonides himself, who was, as is well known, court physician to the celebrated Saladin. After him Hebrew takes its place as the language of Jewish philosophers.

The first of these after Maimonides to be described by Dr. Husik is Hillel ben Samuel (1220-1295) perhaps the first Jew to be acquainted with the Latin schoolmen. He calls Albertus Magnus and Thomas Aquinas 'sages who believe in religion'. No Jew in expounding Aristotle departed so far from the Arabian commentators as, with St. Thomas, to make the Active Intellect *aliquid animæ*, but with regard to the *Possible* Intellect Hillel took this view and regarded it as the subject of reward and punishment in a future life. It was left to another writer of the same age, Isaac Albalag, to import into the Jewish schools the questionable doctrine of 'double truth' for holding which the Parisian Averroists were condemned in 1277. A more important writer was Levi ben Gerson or Gersonides (1288-1344), a Latin translation of whose so-called super-commentaries (that is commentaries on the commentaries of Averroes) on the *Isagoge* of Porphyry and the *Categories* and *De Interpretatione* of Aristotle were incorporated in early Latin editions of Aristotle. He taught that the Possible or Material Intellect was mortal, and only the Active Intellect immortal in its own right, though the 'acquired' or 'actual' intellect of individuals, which is identical in content with the Active Intellect, attains immortality through its union with the latter. 'The more knowledge one has succeeded in obtaining during life, the more he will resemble the Active Intellect and the greater will be his happiness' after death (p. 340). The fortunes of man may be predicted so far as they are determined by the stars; but so far as they are the result of individual choice they cannot be foretold.

Events occur in inanimate nature which are unrelated to human fortunes and yet are due to chance, and these also are unpredictable. The source of prognostications, as also of miracles (the importance of which Gersonides is inclined to minimise), is not God but the Active Intellect. Gersonides, here in disagreement with Maimonides, considers the divine attributes to be more than merely homonymous with ours; on the other hand, God's knowledge of *singularia*, which Maimonides had admitted, Gersonides denies. While not asserting that God's special providence extends to species only, not to individuals (as he takes to have been the opinion of Aristotle, and also that ascribed to Job in the book which bears his name) he agrees with Maimonides and, as he thinks, with Elihu in the Book of Job that there is a special providence only for some individuals, the fates of the rest being left to be determined by the heavenly bodies. He differs from Maimonides again in not holding creation *ex nihilo;* but he does not with Averroes assert the eternity of the world. He adopts an intermediate position; God in time endowed an eternal formless matter with form; this doctrine he holds to be consistent with monotheism, since eternity is not the same as divinity.

In chapter xvi. we find a certain Aaron ben Elijah of Nicomedia (*c.* 1300-1369) returning from the Aristotelianism of the great thirteenth century schoolmen to the old 'Kalam' or Mahommedan philosophy of the Mu'takallamin—*loquentes* (*in lege Sarracenorum*) as the Latin schoolmen rendered the word—which had been originally the dominant influence in mediæval Jewish thought. He argues against the eternity of the world on grounds not only of revelation but of reason, because the sphere, being composite (of sphericity, soul, and intellect), must on the philosopher's own principles be merely a *possible* being, and so not eternal. He fears that Maimonides' attitude to the Aristotelian doctrine (which was also St. Thomas's), namely, that on grounds of reason, apart from revelation, it is tenable though not demonstrated, may lead to the assertion of it as true in the teeth of Scripture. So far from limiting God's special providence to certain select human beings, he extends it even to individual animals; and holds (against Maimonides, who on this point was a loyal Aristotelian) the lower world to have been made for the sake of mankind. He is strongly opposed to a spiritualism which does not give the bodily life its due place; and holds that even miracles cannot authenticate a religion which (like Christianity) recommends monasticism and celibacy. In chapter xvii. we find this tendency to reaction against the Aristotelianism of Maimonides and Gersonides carried further in Hasdai ben Abraham Crescas (1340-1410), whose determinism has, as Dr. Husik observes, been supposed by Joel to have exerted an influence upon Spinoza (who quotes him in one of his letters). The last philosopher here discussed is Joseph Albo (1380-1444), a disciple of Crescas, to whom chapter xviii. is devoted. He taught that Judaism could continue to exist even without the doctrine of God's unity and even with the belief in a Mediator; its fundamental articles are three only, the Existence of God, Revelation, and Reward and Punishment. Only the first two commandments, which the people heard given by God's own voice, and which involve these three articles, are beyond the competence of any prophet to change. A prophet greater than Moses might change the rest: but it is unlikely that any such will arise.

Jewish philosophy, says Dr. Husik (echoing the concluding paragraphs of Munk's *Esquisse Historique de la Philosophie chez les Juifs*) never passed beyond the scholastic stage. 'There are Jews now and there are philosophers, but there are no Jewish philosophers and there is no Jewish philosophy' (p. 432). It is not quite clear in what sense this is meant. Was Moses Mendelssohn, for example (to whom Munk refers but whom Dr. Husik does not mention), not a Jewish philosopher? In some ways his career reminds one of that of Maimonides, though no doubt his place in the history of thought is less important. Both were in the full stream of the philosophical movement of their time and country (Aristotelianism in the one case, the Wolfian *Aufktärung* in the other); both recommended themselves to the respect of their fellow Jews, despite Jewish prejudices against an alien culture, by their Rabbinical learning. No doubt Mendelssohn did not adopt in his philosophising the mediæval attitude toward the Biblical revelation as an independent source of speculative knowledge; but if no philosophy be Jewish which does not do this, to say that 'Jewish philosophy never passed beyond the scholastic stage' is no more than a tautology: and *mutatis mutandis* the same might be said of Christian philosophy as well.

One or two inaccuracies of expression may perhaps be mentioned. Accident' should not be called the *genus* of the Aristotelian categories other than that of substance, as on page 9: for the categories are themselves the *summa genera* in the predicamental tree. The Platonic doctrine of Ideas should not be described (though it often is) as a 'hypostatisation of concepts' (p. 94). On page 115 a curious and un-English construction occurs twice. 'This is Platonic, not Aristotelian, who believes in the eternity of matter.' 'This is good Aristotelian doctrine, who also believes,' etc., where the antecedent to *who* is Aristotle, implied in 'Aristotelian'.

C. C. J. W.

Studies in Education. By M. W. KEATINGE, M.A., Reader in Education in the University of Oxford. London: A. & C. Black, 1916. Pp. vii, 205.

IN the preface to this vigorous and able book Mr. Keatinge complains almost pathetically of the low esteem in which educational studies are held among those who might be expected to welcome and foster them. The case is much as he describes it, and is certainly deplorable; but it is far from being inexplicable. On the whole, a nation gets the educational writers it deserves. So long as it regards its teachers almost as an alien body, in it but, *qua* teachers, hardly of it, mere purveyors of certain external goods with which it is (unfortunately) not possible altogether to dispense—so long it must expect to suffer from feeble educational literature as the natural correlative of inefficiency in its schools. From time to time a prophet may be stung to fine speech by his vision of the contrast between what is and what might be, but there can be no corpus of scientific and philosophical works comparable with those produced by other professions. In short, the teaching profession, judged from the highest standpoint, can never be of much account until it becomes a genuine organ of the nation expressing and subserving in its activities the life and growth of the soul of a people.

The best praise that can be given to Mr. Keatinge's book—and it is meant to be high praise—is that it makes for the fulfilment of the hygienic condition laid down in the preceding sentence. It should do much to give direction and content to the vague aspirations, now stirring among English teachers, towards a fuller and more fertile connexion between the work of the school and the movements of thought and life in the modern world, and it should help the instructed layman to see more clearly in what respect education is *his* business and not merely that of the craftsmen he employs to carry out the details. At the present moment the latter of these tasks is probably the more important. It is all the more fortunate, therefore, that Mr. Keatinge shows in his ideas a virility and breadth, and in his style a directness and force, which should make him welcome in circles where the schoolmaster at large is usually regarded with dislike and suspicion.

At the same time Mr. Keatinge, in his first chapter on "The Aims of Education," stands out bravely and uncompromisingly for the effective autonomy of educational science. "Few archdeacons," he remarks, "would venture to express their views about the processes by which sulphuric acid can most efficiently be produced" yet "no matter how limited a man's experience may be outside his own particular line of work, if he has achieved sufficient distinction in life, or if only he possesses a pretty literary style, he may talk and write about education *ex cathedra*, and there is every chance that both his talking and writing will be taken as seriously by other people as by himself." It would, of course, be a false move to demand the suppression of lay criticisms of schools and their methods. On the contrary, these are data to which (we venture to say on our own account) the quasi-monastic seclusion of the teacher causes him to pay far too little attention. But Mr. Keatinge is certainly right in maintaining that, however distinguished the sources from which they come, they are *only* data, and need digestion and coordination at the hands of the expert student of education before they can safely be permitted to determine the form of educational practice. In other words, the ideal "educationist" will be an interpreter between the macrocosm of society and the microcosm of school, widely sensitive to the great and truly significant things in the larger life and skilled in translating them into their proper equivalents or representatives in school life and work. Speaking broadly, then, he will have to consider, in view of the present state of knowledge and of society, "what are the biological conditions of education, what demands are made by the special features of modern social life, what are the meaning and value of æsthetic for mental and moral growth, and what are the qualities which, while they may in the long run be of use to the community, should yet, apart from this, be cultivated in the individual for their own sake". To these preliminary questions the greater part of the book is devoted.

The author's discussion of the bearing of biology upon education is, perhaps, the most weighty part of his contribution, and certainly best illustrates the sanity and independence of his views. He begins with a *resumé* of the relevant results of modern inquiries into heredity, in which Galton and the biometricians are mainly followed and the history of the terrible Jukes family takes an important place. The consideration of Mendelism is excluded on the ground that "in its present condition it has little bearing on educational theory". In this connexion Mr. Keatinge might find it useful to study Prof. J. H. Fleure's recent memoir on the distribution of anthropological types in Wales—especially the suggestion that, under certain social conditions, long buried types may re-emerge and affect powerfully the general character of a local population. This view, if well founded, is undoubtedly to the point, and appears to support Mr. Keatinge's main contention—which is that education, to be really effective as a social instrument, must be administered on "aristocratic" principles. By this he means that the sound policy is to concentrate educational expenditure, financial and spiritual, upon the cultivation of special aptitudes based upon strong physical heredity rather than, under the guidance of the notion of "social heredity," to spread it uniformly and to attempt to run all our children into the same mould. He gives good reasons for the view that this policy, if boldly carried out, would do much to promote eugenic marriages, and would, above all, work effectively against the present fatal tendency of large sections of the population to become "immune" against the education given in the schools.

Mr. Keatinge treats the subject of "Education and Æsthetic" with the seriousness it deserves. He gets away from the old platitudes and well-worn *clichés*, and "documents" his chapters in a fresh and interesting way. We are entirely at one with him in his opinion that "it will be for the school of the future to lay at least as much stress on the arts of self-expression as on the acquisition of knowledge, and to ensure that æsthetic feeling shall pervade the community, quickening its interests and preserving its vitality".

Nevertheless his discussion might, we fear, be taken by one who has assimilated the teachings of Croce as an example of the way in which æsthetic questions suffer when treated from a too-exclusively psychological standpoint. In considering the pedagogy of the subject it is no doubt proper to give a larger place to the affective elements in æsthetic activity than the Italian philosopher admits in his analysis. It is, indeed, necessary to do so in view, first, of the "didactic" uses of fine literature (the legitimacy of which Croce would himself allow), and, secondly, of the deadening methods ot instruction too common in our schools. But, in stressing the value of art-subjects as media for the cultivation of feeling, Mr. Keatinge comes, we think, dangerously near to the fallacy of formal training. The truth is that the importance of feeling as an element in educational activity tends to be forgotten in almost all school teaching, and, perhaps, most of all in the scientific subjects, where, apparently, even Mr. Keatinge would tolerate its absence. It would, therefore, seem more helpful to follow Croce in regarding æsthetic as a development of the "theoretical" activity of intuition, accompanied and supported, like all forms of mental activity, by feeling, but demanding cultivation in its own character as a specific type of human excellence. Lest injustice should be done to our author, it should be added that he has qualified his argument in such a way as to protect it to some extent against these criticisms; the general tendency of his doctrine appears, however, to need correction.

In the chapter on "Social Needs and the Curriculum" Mr. Keatinge devotes himself mainly to developing the position that better physical training and a better "education for leisure"—including especially a better training in the enjoyment of literature, music, and the plastic arts—are the reforms chiefly needed in our scheme of popular education. In his treatment of these questions he has anticipated in an interesting way the contentions recently set forth by a committee on behalf of the Workers' Educational Association. Mr. Keatinge's chapter and the memorandum of the committee both raise issues of extreme importance which cannot here be debated. It must suffice to indicate the most serious line of criticism by a question: Can there be a satisfactory solution of the problem of popular education if it is to be assumed as one of the permanent conditions thereof that the economic life of the bulk of the population offers an almost negligible basis for truly educational activity?

The book concludes with chapters on less closely connected topics: "Freedom in Education," "Imagination," and "Politics as a School Subject". In the first of these Mr. Keatinge disposes with much ease—dialectically—of some present-day educational prophets. Doubtless many extravagances are uttered—possibly even crimes committed—in the name of liberty in education; but it is scarcely fair to attach the responsibility for these to people who would condemn them as severely as Mr. Keatinge himself. Moreover, indulgence is due to failure in making logic-proof a doctrine of practice based upon so elusive a notion (but so real a thing) as spontaneity. As Lord Haldane observed to the German Chancellor, it is impossible to say how many grains make a heap, but one nevertheless knows a heap when one sees it. Similarly, a visitor to a well-conducted "Montessori school" must recognise that he is in the presence of something substantially different from what is to be found elsewhere, though it may be hard to characterise the difference in general psychological terms.

For the rest, it should be said that in the chapter on politics in school Mr. Keatinge deals with a difficult and urgent question with the directness, the candour, and the suggestiveness that make his treatment of all the matters he has touched in this book so remarkably interesting and provocative of thought.

T. P. NUNN.

IX.—NEW BOOKS.

Human Ideals. By FREDERICK A. M. SPENCER, M.A. London: T. Fisher Unwin, 1917. Pp. xi, 280.

THE author of this book deals with the principles of human progress and the broad lines along which it is to be realised. He writes clearly and simply, and his outlook on the world is hopeful. He tells us his book was thought out and partly written before the War, and recent experiences might perhaps have modified his optimism. As he admits in his Preface, "Our belief in the progress of man has suffered shock from the wickedness that produced the war, and the crimes that have been committed in the course of it". Judging from his work, one would not suppose Mr. Spencer has any very wide or intimate knowledge of philosophical literature: save for a single reference to Bergson he makes no mention of philosophic thinkers, and there are hardly any references to books on social subjects. In fact Mr. Spencer pursues his argument with considerable independence of mind, and what he has to say is usually interesting and sometimes suggestive.

Although the volume is not a large one, it covers a great deal of ground, and as a consequence the reader cannot expect a very thorough discussion of many of the problems handled. These problems are ethical and religious as well as economic and social. The opening chapters deal with Morality and Religion, and these are followed by others treating of the Distribution of Wealth and Production and Consumption. Afterwards Mr. Spencer discusses such subjects as Liberty, Brotherhood, Parenthood, Education and Sex. At the close he returns to religion in a chapter on Eternal Life. What the author is chiefly concerned to do, is to point out defects in the existing structure of society and in current habits and ideas, and to indicate the general direction in which human ideals are to be realised. It will suffice to give one or two illustrations of the way in which he deals with these matters.

In a broad sense Mr. Spencer's outlook on life is religious: morality is to be based on the infinite value of souls and the hope of a transcendent society. Religion he defines—not very adequately indeed—as "the action of men whereby they seek to interact with the Supreme Intelligence". From contrition for sin man must advance to sonship with God in a Kingdom of God, or to the ideal of a universal Divine Humanity. As regards the distribution of wealth the problem, we are told, is to secure its equitable division. But besides this we require to increase the amount to be distributed, and also to ensure that the profits of industry should not be spent in luxury. The aim of life is the development of personalities, and the production of wealth ought to be made to subserve that aim. Hence the need of dealing with unhealthy trades. Most people will agree with much that Mr. Spencer says on these questions, but he is better at diagnosing the troubles in the body corporate than in showing how they are to be cured. In treating of remedies he is too vague and general, and is over hopeful about the way in which difficulties are to be overcome. So, for instance, he says: "There are fetters of custom to be snapped, and this may demand some courage and self-sacrifice on the part of the pioneers of change. But when this is done civilisation may be expected to transform itself quite happily into something far more truly human."

Mr. Spencer has useful remarks on the existence of upper-class and lower-class occupations, and he points out there are still difficulties in the way of children of the lower ranks getting the opportunity of rising to the higher vocations, with the result that much latent ability is not utilised. When he comes to the remedy Mr. Spencer is again very general: there must be opportunity given of preparing for the higher professions irrespective of wealth, and the mass of the people must have means, leisure and education to develop their personalities. No doubt; but such generalities do not carry us very far. The chapters on Sex and on Education will repay reading. On the sex question Mr. Spencer writes with good sense. Women must have the same rights of development and citizenship as men, and the authority of the one sex over the other should only be that of moral and rational influence. Apropos of education he remarks, that hitherto it has failed to make men understand life. The reply would be, that it is hard to see how education can ensure what, in the end, must be learned by experience.

In his concluding chapter on Eternal Life the religious and mystical side of Mr. Spencer's mind is revealed. In the notion of an eternal life in God, he thinks that the mundane and supramundane aspects of the human ideal are reconciled. With progress in eternal life the temporal will be transfigured by the transcendent world; the time will come when death will be abolished and humanity itself will rise into a state of immortality. Probably most readers will find something fanciful in this idea of a glorified humanity. The scientific evidence tells against the belief that conditions favourable to life on earth will continue indefinitely. And in the doctrine of individual immortality we have the adequate assurance of the conservation of values. But if one cannot always agree with the author, he has something of his own to say on the questions he discusses, and says it in a frank and interesting way.

G. Galloway.

Kant's *Teleologie*. Door C. Pekelharing, Noordhoff, Groningen, 1916. Pp. viii, 243.

This volume consists of a number of articles, published previously in theological and philosophical journals, and bearing upon the subject of Kant's teleology. In spite of the author's efforts to give consistency to the whole, a certain disproportion appears both in the space allotted to different topics and in the treatment itself. The successive chapters, after an Introduction on the notion of Final Cause, and on the value of teleological explanation,—deal with Kant's theory of knowledge; his views on the idea of Final Cause; his criticism of the argument from design; his idea of the "formal adaptation" of nature to human understanding; beauty and design; geometrical form and design; organic adaptation in nature (adaptation of part to whole in the individual); relative adaptation in nature (adaptation of species to species, of plants to animals etc.). Some of these problems are very slightly treated, and the chapter on beauty and design is mainly a restatement of Heymans' theory. The parts giving Kant's views and their history are clear and adequate, but the critical sections are hardly satisfying.

The underlying principle of the author's judgments is given on page 13, where *explanation* is defined, after Sir William Hamilton, as the reference of a new thing to an old or already existing thing; and on page 125, where it is said we have an innate conviction of the permanent identity of the real; all change is logical; cause and effect stand to each other simply as premise and conclusion. This also derives from Prof. Heymans, the only writer, according to Pekelharing, who has given "with perfect clearness a complete analysis of the notion of cause". The clearness may be admitted, but the completeness is another question.

From this point of view it is natural that the highest praise should be given to the Transcendental Principle which Kant introduced, his disproof of the physico-theological argument from design, and the conciliation between mechanism and teleology, which he foreshadowed (*viz.* as subordinate or preliminary principles of explanation), pp. 26, 234, etc., but that on the other hand the whole body of doctrine connected with the idea of the Reflective Judgment, such as the judgment of taste, with its subjective *a priori*, is rejected as valueless or fantastic, page 152, *et al.* The supposed *a priori* in the adaptation of organisms is also "fantastic" (p. 221), as is the idea of man as a *noumenon*, an end in himself, the ultimate, highest end in nature, etc., and as a moral will, free, above and outside of the causality of nature (pp. 238, 239). In general, it may be said that all which in Kant appeals to the moral or religious in man is rejected, and only the purely intellectual, or rather logical, approved.

J. L. McI.

Rechtskundige Significa. By JACOB ISRAËL DE HAAN. Amsterdam: W. Versluys, 1916. Pp. 273.

The full title is "Significs of Law and its application to the notions of 'accountability, responsibility, imputability'". The first chapter gives such general account as is required, in the absence of a handbook, of the new science of Significs (see MIND, 1899, 1900, and 1901); the second chapter explains why the particular subject of Responsibility has been chosen as an illustration of the method of Significs; while the three remaining chapters discuss the terms in question, subject them to a detailed analysis, and apply the results to particular problems.

The whole is a useful practical demonstration of the value of Significs, Semantics, or the Science of Meaning, to which Lady Welby gave the initiative in this country. The capacity of expression, it is shown, of a language is greater, the more logical the language is; a language is more logical, the more fully conscious is its use of existing and its formation of new words; Significs teaches a more conscious and logical use of words; the Significs of Law must be practised in connexion with general Significs and with the Significs of other branches of knowledge; as the power of expression of legal language increases, that of other subjects is increased, and *vice versa* (p. 88). In particular, the task of the Significs of Law is to trace the history of the meanings of all words used in the laws, pleas, judgments, etc., of a nation, to systematise them, and to suggest developments along logical lines (p. 75). De Haan shows that the so-called "laws" of language formation and development do not imply a supra-human principle, whether spiritual or material, controlling human activities, but are merely summarising and descriptive formulæ (p. 51), that the individual is not powerless or negligible as an influence making for change in the meanings of words, that such changes are conscious as well as unconscious, that a consciousness of the etymology of words is an aid rather than a hindrance (as is sometimes said) to the force and clearness of expression ; and that to put a question in pure logical words is equivalent to answering it (p. 211), in legal and moral problems at least.

The technical part seems, like so many Dutch works of science, overloaded with quotations from all sorts of authorities, great and small, of most of whom we in this country are in regrettable ignorance.

J. L. McI.

Psychologie der Frühen Kindheit. W. Stern. Leipzig, 1914.

This book includes a fairly complete account of the recent work of other writers in the psychology of childhood up to the age of six, but is based to a large extent upon the observations of the author and his wife upon their own three children. The writer's plan is to take various aspects of mental life in turn, *e.g.* the development of speech, memory, play and imagination, thought, suggestibility, etc., and to study the development of each from its earliest appearance in the child.

The book is perhaps the most comprehensive summary of the subject extant, though it is necessarily less complete in reference to special topics than such monographs as Miss Shinn's on Sensory Development, and the author's own thorough study of the acquisition of language. Dr. Stern marks the various stages in the development of the different mental capacities with great care, but the book is more remarkable for system than for subtlety. It should be useful for fairly advanced students of psychology, but some of it will be regarded as padding by the expert, while it is more than is required upon early child psychology by the average school teacher. It is of interest to note that this careful observer of child-life thinks very little of the methods of Freud as a means of studying the infantile mind.

C. W. V

John of Ruysbroeck. The Adornment of the Spiritual Marriage ; *The Sparkling Stone* ; *The Book of Supreme Truth.* Translated from the Flemish by C. A. Wynschenk Doon Edited with Introduction and Notes by Evelyn Underhill. London : Dent & Sons, 1916. Pp. xxxii, 259.

It is hardly possible to do more in a review like Mind than call attention to this admirable English version of perhaps the greatest of all the mediæval mystics. Translator and editor are both to be congratulated on the way in which they have performed their work. The treatises in their English dress read like original compositions by a master in the devotional use of our language. In the introduction and the notes appended at the end of the volume, Miss Underhill supplies the English reader with adequate information about the life and connexion of Ruysbroeck, and explains with excellent lucidity the dependence of the great Christian mystics of the golden age on the philosophy of Plotinus. It might have been observed that the thoroughness of the mystics' assimilation of Plotinian metaphysics is the more remarkable that their knowledge of Plotinus, whose works were not translated into Latin until the fifteenth century, must have been wholly at second-hand through such later writers as Augustine, Boethius, Proclus, and "Dionysius". Yet almost all Ruysbroeck's most striking illustrations of the nature of the union of the soul with its Creator are to be found *verbatim* in the text of the *Enneads*, and can even usually be traced back through the *Enneads* to their original sources in some of the more mystical utterances of Plato's Socrates. It would not be in place here to criticise as metaphysics what is meant to be a manual of practical devotion, a book of directions for the soul that is following the quest. And even if it were otherwise in place, it would be impossible to undertake an examination of the metaphysics of Plotinus in a brief notice like the present. But, since mysticisms of many kinds seem to be much in the air just now, I may just refer to one great merit of Ruysbroeck's treatises on which Miss Underhill rightly lays stress,—the very clear and plain distinction he draws between a genuinely spiritual and ethical mysticism, and its parody in doctrines of immoral and antinomian quietism. "Theosophy," "the new thought," and the rest of the quackery would have found short shrift at the hands of the earnestly *Christian* mystics of the fourteenth century.

A. E. T.

Rivista di Filosofia Neo-Scolastica. Anno ix., Fasc. 2, 3 (April, June, 1917). Milan.

The articles in these numbers are well up to the usual high standard of the review. There is a specially topical interest about Fr. Gemelli's essay in the April number on superstitions of soldiers in war time as illustrated by his own observations on the Italian front. Fr. Gemelli is an excellent psychological observer, and the volume on the psychology of the soldier, from which he tells us this paper is an extract, should be a valuable contribution to the science. Another essay of special interest at the present moment is Mr. Necchi's general review of the philosophy of Leibniz, occasioned by the bi-centenary of the philosopher's birth. The author seems to me hardly sufficiently acquainted with the important Leibniz MSS. recently published by the late M. Couturat, but his essay is of great interest as indicating the points when an able representative of Neo-Thomism feels bound to disagree with normalistic metaphysics. For my own part, I cannot help wondering whether S. Thomas himself, were he now among us, would be as Thomist as his followers. I have too much reverence for that great intellect to be very ready to believe that it would be imposed on by the trivial considerations urged by Mr. Necchi against the "actual infinite," and I should have thought it hardly correct to say of Leibniz's schemes for the reunion of the Churches that they had the fault of requiring the Roman Church to make all the concessions. Unless, indeed, what is meant is that Romanism has *since* Leibniz's time become so ultra montane that to concede anything at all is to concede its first principles. In a third essay in the April issue on the "Philosophy of Contingency," and one in the June number on Boutroux, L. Borriello makes an interesting study of the spiritualist reaction against Positivism in France. Of the other articles in the June issue, one by L. Botti is a thoughtful discussion of the attitude of philosophy to war, the other, by F. Olgiati, discusses the philosophical worth of Royce's idealism from the Thomist standpoint. With most of the writer's criticisms on the lack of the needful realistic basis in Royce's scheme of things, I find myself much in accord. I should add that the criticism is conjoined with eloquent appreciation of Royce's aims and achievements. There is an interesting "note" by B. Rutkiericz on the philosophical significance of "vitalism," and I am glad that the *Rivista*, which cannot be suspected of Kantian leanings, has uttered a dignified protest against the attempt to make the events of the present war a ground for personally scurrilous attacks on the character of Kant.

A. E. T.

Received also :—

Sri Ananda Acharya, *Brahmadarasanam, or Intuition of the Absolute*, London, Macmillan & Co., 1917, pp. xii, 210.

De Witt H. Parker, *The Self and Nature*, Cambridge, Harvard University Press, 1917, pp. ix, 316.

James Drever, *Instinct in Man*, Cambridge University Press, 1917, pp. x, 281.

Antonio Aliotta, *La Guerra Eterna, e il Dramma dell' Esistenza*, Napoli, Francesco Perrella, pp. 221.

Giuseppe Saitta, *Il Pensiero de Vincenzo Gioberti*, Messina, Giuseppo Principato, 1917, pp. 452.

Benedetto Croce, *Logic as the Science of the Pure Concept*, translated by Douglas Ainslie, London, Macmillan & Co., 1917, pp. xxx, 606.

John Laird, *Problems of the Self*, London, Macmillan & Co., 1917, pp. vii, 375.

Giovanni Gentile, *Le Origini Della Filisofia Contemporanea in Italia*, vol. Primo Il Platonici, Messina, Giuseppo Principato, 1917, pp. ix, 410.

James Gibson, *Locke's Theory of Knowledge and its Historical Relations*, Cambridge University Press, 1917, pp. xiv, 338.

J. G. Vance, *Reality and Truth*, London, Longmans, Green & Co., 1917, pp. xii, 344.

William M. Salter, *Nietzsche the Thinker, A Study*, New York, Henry Holt & Co., 1917, pp. x, 539.

Fr. Agostino Gemelli, O.F.M., *Il Nostro Soldato*, Milano, Vita E. Pensiero, 1917, pp. xii, 339.

X.—PHILOSOPHICAL PERIODICALS.

PHILOSOPHICAL REVIEW. Vol. xxvi., No. 4. **B. W. Van Riper.** 'On Cosmic Reversibility.' [The notion of reversibility, whether it be the orderly undoing of its work by a machine, or a concept applicable to the ultimate hypothetical world of abstract physics, or an objective analogue of the backward reading of a mathematical equation, or a reversal of the time-stream itself, dissolves away into pseudo-mathematical dreaming.] **H. Haldar.** 'Leibniz and German Idealism.' [Leibniz' conception of ultimate reality as a system of minds in which an all-inclusive spiritual principle is realised is essentially that of Kant, Hegel, and Lotze: witness the final development of the thing-in-itself, Hegel's Absolute as impersonal unity of finite but perfect selves, and Lotze's relations as modes of the one all-embracing mind.] **H. E. Bliss.** 'The Subject-Object Relation.' [Objects exist external to and independent of subjects. Object implies not merely existence in relations but the special relation of appearance to a subject, or subjects, so qualified and so related as to apprehend such object. Subject is that to which objects appear, have appeared, or may appear.] Discussion. **C. Rinaker.** 'The Dualism of Mr. P. E. More.' [More's system is not dualistic; in its practical working it is partly pragmatic, and in the last analysis it is essentially idealistic.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes. **R. M. Yerkes.** 'Hugo Münsterberg.'—Vol. xxvi., No. 5. **A. Lalande.** 'Philosophy in France, 1916.' [Discusses the influence of the war on morality, by way both of present unification (Barrès, Petit) and of future problems (Belot, Maxwell); analyses Le Dantec's *Le problème de la mort et la conscience universelle*; pays a tribute to Delbos and Ribot.] **R. B. Perry.** 'Purpose as Tendency and Adaptation.' [Neither temporal direction nor tendency nor the relation of an external agency to a tendency signifies purpose. The term might be predicated of adaptation or complementary adjustment (compensatory, progressive, preparatory); but we are here still in the realm of the automatic; and purpose is therefore best reserved for plastic or modifiable adjustment.] **J. Laird.** 'Introspection and Intuition.' [Critique of Bergson. Introspection, regarded as an act of direct acquaintance with the mind, is a feasible operation; and psychology therefore does not require a theory of knowledge peculiar to itself, or a special faculty of intuition.] **J. E. Creighton.** 'Two Types of Idealism.' [Mentalism or existential idealism asserts that everything is mental in character, and by thus transforming experience into an order of existences takes on the problem and mode of thought of realism. Historical speculative idealism sees that the reality known in experience, as existing concretely, forms part of a permanent system of relations and values; it thus holds fast to the unity of existence and significance. "Experience is at once an explication or revelation of reality, a comprehension of the mind of one's fellows, and a coming to consciousness on the part of the mind of the nature of its own intelligence."] Discussion. **A. O. Lovejoy.** 'Progress in Philosophical Inquiry.' [Reply to critics of the proposed *Summa Metaphysica*.] **J. Lindsay.** 'The Knowledge of Other Minds.' [Reality is the support of value, and selves may be known as well as their purposes and intentions.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes. **J. Loewenberg.** 'A Bibliography of the Unpublished Writings of Josiah Royce.' **W. M. Urban.** 'A Correction.'—Vol xxvi., No. 6. **A. K. Rogers.** 'The Nature of Certainty.' [Certainty attaches to intuitions not because they are necessary but because they are self-evident. There is no ultimate necessary truth except the formal truth that reality cannot combine strictly contradictory predicates. Self-evidence applies solely to judgments about the content of present (or just past) experience, to the effect that this content exists and that such-and-such is an accurate description of it.] **H. C. Warren.** 'The Mechanics of Intelligence.' [Every factor concerned in the manifestation of intelligence (selection of movement, learning, satisfaction) may be adequately explained in neural (physicochemical) terms without the hypothesis of a guiding influence of consciousness. The value of consciousness is the subjective life which it furnishes to the individual.] **G. A. de Laguna.** 'Phenomena and Their Determination.' [We must distinguish real from pseudo-phenomena, which are indeterminate; and analysis of a phenomenon into elements from its reduction to a collection of items occupying the same *locus.* Philosophical atomism assumes wrongly that, because any *locus* may be described in a certain way, any phenomenon may be so described.] **A. R. Chandler.** 'Professor Husserl's Programme of Philosophic Reform.' [Neither the reduction to pure consciousness nor the reduction to eidetic analysis affords to phenomenology any novel content outside the scope of an exhaustive psychology. The gain by concentration of attention is more than offset by the loss of a consistent method and of guiding ideas derived from other sciences.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes.

BRITISH JOURNAL OF PSYCHOLOGY. Vol. viii., Part 2. **Henry J. Watt.** 'Stereoscopy as a Purely Visual, Bisystemic, Integrative Process.' [Maintains that the integration of stereoscopy cannot include any quality other than visual; that stereoscopy cannot be founded on any single attribute except "systematic order," and not directly even upon that, and that it rests proximately upon bisystemic differences of distances and forms. A full discussion of the author's theory follows.] **N. Carey.** 'Factors in the Mental Processes of School-Children. III. Factors concerned in School Subjects.' [An examination of correlations obtained between various school subjects. Children who do particularly well in work involving especially motor co-ordinations are often lacking in general ability. Results indicate the existence of (*a*) a general factor, (*b*) one large additional complication, the motor factor, (*c*) one small additional complication, the association between written words and their meanings.] **A. W. Walter.** 'The Process of Negation.' [An experimental study which revealed two psychologically distinct forms of negation—(1) Negatives of construction, which are psychologically similar to affirmatives, so that *S is not P* is better represented by *S is non-P*; and (2) Negatives of denial, which involve a more or less emotional attitude of hostility or distrust.] **James Ward.** 'A Further Note on the Sensory Character of Black.' [Replies to Titchener's criticisms of the author's contention that black is not a sensation.] **F. C. Bartlett.** 'An Experimental Study of some Problems of Perceiving and Imagining.' [Discusses, among other points, the parts played by feeling and by imagining in the process of perception.]—Vol. viii., Part 3. **Godfrey H. Thomson.** 'A Hierarchy Without a General Factor.' [Shows a hierarchy of correlation coefficients obtained in dice-throwing experiments.] **C. Spearman.** 'Some Comments on Mr. Thomson's Paper.' **Carveth Read.** 'The Relations Between Magic and Animism.' [After dealing with the theories of Wundt and Frazer, discusses the ideas and practices of magic adopted by Animism and the knowledge of spirits about magic, their mode of operation through magic, and their control by magic.] **W. G. Smith.** 'The Prevalence of Spatial Contrast in Visual Perception.' [Experiments revealed that contrast-effects are dominant in the case of men, confluence-effects in the case of women.] **May Smith.** 'A Contribution to the Study of Fatigue.' [Experiments, extending over three years, in fatigue produced by loss of sleep. In the first phase fatigue acts as a stimulant; later, there is a loss of accuracy and of concentration. Subjective feelings are quite unreliable as a clue to the extent of fatigue. It seems possible to become partially immune to a particular form of fatigue. The time taken to return to a normal condition after the loss of a few hours' sleep is disproportionately great.] **Bernard Muscio.** 'The Influence of the Form of a Question.' [Experiments on fifty-six persons: questions asked about moving pictures. Suggestiveness decreased by use of the definite article instead of indefinite; increased by introducing a negative into the question. Use of objective form of question (Was there a dog?) instead of subjective form (Did you see a dog?) decreases suggestiveness and decreases caution. The practical value of the conclusions in cross-examining are discussed.]—Vol. viii., Part 4. **Carveth Read.** 'On the Differentiation of the Human from the Anthropoid Mind.' [Attributes the evolution of man from anthropoids to the adoption of a life of hunting for animal food and as a consequence the development of "pack" life: hence it is that man resembles the dog more than the ape. The development of various psychological characteristics of man is traced to the necessities consequent upon hunting in packs.] **A. Wohlgemuth.** 'On Feelings and their Neural Correlate with an Examination of the Nature of Pain.' [If, as usual, it is granted that every elementary state of consciousness corresponds to a definite nervous process then the feelings have their neural correlate in the excitation of specialised neurones. An experimental investigation showed that pain was not a feeling-tone or the acme of unpleasantness, but a sensation of definite modality which is not always unpleasant and which may be pleasant. The writer discusses the evidence of Head and Holmes, which suggests that the centre for feeling probably has its seat in the lateral zone of the optic thalamus.] **J. C. Flügel.** 'Freudian Mechanisms as Factors in Moral Development.' [Discusses the three ways of solving mental conflicts, *viz.*, repression, displacement (including sublimation), and deliberate choice. The possible bad consequences of repression are considered, and the relative superiority of sublimation shown, though of the mode of sublimation little is known, and probably, as a rule, it is unconscious. From the point of view both of morality and mental health, conflicts are best settled by "deliberate choice," which, as contrasted with repression, is characteristic of a relatively advanced stage of evolution and of democratic rather than autocratic forms of government. Socrates' doctrine of the relation between virtue and knowledge is also discussed in the light of Freudian psychology.] **Shepherd Dawson.** 'The Experimental Study of Binocular Colour Mixture.' [A brief historical survey followed by an elaborate experimental investigation dealing with binocular combination of complementary colours, of non-complementary colours, colours of the same tone and brightness but of different saturation, the effect of background, and of contour and size of coloured surfaces. A full bibliography is appended.]

"SCIENTIA" (RIVISTA DI SCIENZA). Series ii. Vol. xx. Part 2. August, 1916. **J. L. Heiberg.** 'Le rôle d'Archimède dans le développement des sciences exactes.' [Short and excellent sketch of the position of the work of Archimedes in the history of Greek science, its influence on his contemporaries and succeeding generations, and the fate of his various manuscripts.] **L. De Marchi.** 'Le acque del Carso.' [On the burning question of the subterranean circulation of water in the fissures of the calcareous rocks in the Carso.] **L. Vialleton.** 'A propos de la loi biogénétique : Les ébauches embryonnaires et la précocité de la forme spécifique.' ['This is not a discussion of the biogenetic law. Such a subject would demand much more than an article. I wish simply to recall some facts borrowed from the development of vertebrates, which, in spite of their importance for the discussion of this law, have not had, it seems to me, enough attention paid to them.'] **J. B. Clark.** 'The Economic Dynamics of War.' ['What we chiefly need to know is in what condition nations will find themselves when they have added, let us say, fifty billions of dollars to their previous debts, and have, at the same time, greatly reduced their power to pay debts. Only the purely economic effects lend themselves to measurement, and a few principles applying to these are what this paper will attempt to state.'] **E. Catellani.** 'Condizioni e presidi di pace.' [To answer the questions as to how we can shorten the war and preserve the future peace, the author quite understandably finds it necessary to compare the present situation with that of the greatest wars of the past, and then considers in the light of the results of historical experience, the means proposed or tried up to the present time to preserve relations between states from armed conflicts.] Book Reviews. [We may notice a review of three books on heredity and memory by E. Hering, V. Haecker, and J. Ward.] Review of Reviews. French translations of Italian and English articles.—Series ii. Vol. xx. Part 3. September, 1916. **E. E. Fournier d'Albe.** 'The Future of Selenium.' [In 1873 it was found that the resistance of selenium falls on exposure to light. A phenomenon quite distinct from this was discovered in 1878 : it is the generation of an electromotive force in a voltaic cell in which selenium is an electrode, as soon as light falls upon the selenium and during the whole time of illumination. After indicating the reasons for the failure of many devices involving the action of light on selenium, and giving a list of six suggestions for and partial or complete solutions of such devices, the author indicates the main lines of probable development, and gives some numerical data on which prognostications may be based. Selenium 'enables us to translate light into any other form of energy, to make a star ring a bell or record its passage on a chronograph, to make a beam of light convey an audible message or explode a mine. It gives to light a new importance, a new function, a new interpretation. Wherever a beam of light can penetrate, there it can be the bearer of human intelligence and human will. And every beam of light bears within itself untold secrets which only selenium can reveal. Its future is likely to be as important as photography has been in the past. It is in its infancy. No longer need we look for the future developments of physical science "in the third decimal place" only. For here is a world unexplored just laid open to us, and plenty of discoveries to be made by every earnest seeker after truth.'] **H. de Vries.** 'Croisements et mutations.' [Up to the present time only one group of organisms has been discovered which reveal in their full richness the phenomena of heredity and hybridation. Almost all the other groups are constant and uniform as regards heredity, and follow Mendel's law in their crossings. The evening primrose alone behaves differently in different cases. . . . The study of the origin of the mutations of the *Oenothera* has given us a rapidly increasing collection of facts which may serve for the discussion of the origin of species in general (*cf.* the author's article in *Scientia* for January, 1916). It has, besides, awakened a lively interest for the experimental treatment of this very important question.] **E. Rignano.** 'Il ragionamento "intenzionale". Parte I^a : Il ragionamento dialettico.' [In the author's previous researches (*Scientia*, 1915) on reasoning, the reasoner was not supposed, at the beginning of his reasoning, to have any wish to sustain certain theses to the detriment of certain others, but simply the wish to discover the *truth*, whatever it may be. The 'intentional' reasoner, on the other hand, reasons to justify certain well-defined affirmations. He knows the aim and end of his reasoning *because he wishes it.* In this article a psychological analysis of dialectical reasoning is given: a second part will deal with the other principal variety of intentional reasoning—metaphysical reasoning.] **G. Alexinsky.** 'Les éléments européens dans l'économie nationale russe.' [A mass of interesting details showing that 'it is no exaggeration to say that, though, as to political forms, Russia is as yet far from being truly Europeanised, its economic bonds and aspirations are far more European than Asiatic.' The place of England in the Russian market is lower than that of Germany, but much higher than that of the other European countries. Causes of the commercial supremacy of Germany in Russia. 'The Germans, far from being prevented by England from making huge conquests in Russian trade, actually try gradually to monopolise the trade.'] **G. Diena.** 'Per l'adozione di un diritto internazionale convenzionale fra gli Stati dell' Intesa.' [The author thinks that the results of the recent Paris conferences between the Powers of the Entente are not enough: it would be eminently useful that these Powers could come to an agreement on a precise code of international law between themselves. For a durable progress of international law we must at present try, not so much to extend the adoption of those rules which would entail too great sacrifices for those States which adopt them, but rather to intensify the progress of certain positive rules among a small number of States which are ripe for submission to them. Respect for treaties is fundamental. The author would like a sub-Committee of Entente members of the Institute of International Law to assist the ripening process referred to.] Book Reviews.—Series ii., Vol. xxi., February, 1917. **G. Loria.** 'L'enigma dei numeri immaginari attraverso i secoli.' [At first, of course, 'imaginary' numbers were ignored and then banished; then (sixteenth century and later) they were tolerated. An excellent and interesting article, in which the services of British mathematicians of the early part of the nineteenth century are (as is to be welcomed) described rather more fully than has usually been the case with historians of mathematics.] **P. Zeeman.** 'L'hypothèse de l'éther immobile.' [The fundamental (Fresnel's) hypothesis of the immobility of the æther is: The æther passes freely through the earth, and the velocity communicated to it (because it is partially dragged along by refracting bodies) is only a small part of that of the earth. There are three phenomena which are in favour of the hypothesis of the immobility of the æther: the aberration of stars observed by Bradley; the experiment of Fizeau, which has lately (1916) been repeated under more exact conditions by the author; and an experiment (1903) of the Russian physicist Eichenwald.] **J. R. Carracido.** 'Les fondements de la biochimie.' [The only positive foundations of biology are those of biochemistry.] **T. N. Carver.** 'The Probable Effect of the European War upon the Redistribution of Population.' [After detailing some general principles of migration, the author remarks that, in the present application of these principles, much depends upon the outcome of the war, and that probably the largest factor in the whole problem is the Turk, whose rule is quite extraordinarily bad. 'The quality of the immigration to the United States is likely to fall rather than to rise after the war. In the first place, we shall doubtless get considerable numbers of those whose chief desire is to avoid military duty. . . . In the second place, the contraction of the markets of the nations that are beaten will force a redistribution of the congested urban population. . . . A few high-spirited people may come to us to avoid the shame of living under an odious conqueror; but that depends upon the outcome of the war.] **J. B. Napier.** 'The Probable Future of Britain as a Military Power.' ['If Germany is well beaten Britain will not seek to increase her European interests and influence, except so far as the definitive treaties entered into by her, at the close of the War, necessarily involve such an increase. She will, I think, however, greatly strengthen her military organisation, rather with the view of enabling herself to fulfil her obligations to her Allies . . . than because she is distrustful of her pre-war defensive organisation. . . . She will not seek to become a military Power in the Continental sense. . . . England aims, not at supremacy, but at being an equal member of a European confederacy. . . . If the war should end without a decisive victory for the Entente Powers; if Germany should not be so beaten that she sets about to change her evil heart . . ., then very different considerations will determine British Policy.' Then the author becomes rather vague and very eloquent.] Book Reviews. [The books on economics that are dealt with are A. C. Pigou's *Wealth and Welfare* (London, 1912) and *Unemployment* (London, 1915), W. C. Mitchell's *Business Cycles* (Berkeley, Cal., 1913), and A. Loria's *Les bases économiques de la justice internationale* (Kristiania, 1912).] Review of Reviews. Chronicle. [A new journal, the *Nuova Rivista Storica*, has appeared at Rome: it is a welcome sign of the renascence of historical studies in Italy, and a protest against certain errors in German historiography.] French translations of articles in Italian and English.

XI.—NOTES.

THE DREAM OF "FRUSTRATED EFFORT":

A SUGGESTED EXPLANATION.

THE suggestion proffered in this article implies at least three things. Firstly, the occurrence of a specific type of dream that can be labelled "frustrated effort"; secondly, a corresponding tendency in the dreaming mind to dream in this particular way: thirdly, a cause behind this tendency that can be isolated and distinguished. The two ends of this series contain the debateable points. If there be a specific type of dream in which we try to do things and fail, it must result from a tendency to dream in this way. The main difficulty resides in the third term. If the tendency exist it must repose upon cause; but it is much easier to perceive that a cause is there than to deduce its nature. It is comparatively easy to demonstrate the existence of the first term—the existence, that is, of a definite class of dream in which we experience "frustrated effort".

It is difficult to resolve the chaos of the dream-world with any completeness; but it is possible to perceive that the dreaming consciousness has certain habits—it distinctly tends to dream along certain lines. In his Essay on "The Sublime and Beautiful" Burke refers to a dream of falling, and his reference indicates that he regarded it, both for himself and for others, as a very common experience. The belief that a sleeper who touches bottom in a falling dream never wakes again intimates a recognition by the popular mind of this particular type of dream. Hutchinson, from replies to a questionnaire, found that the dream of falling was both widely distributed among dreamers and of frequent occurrence in the dreams of certain individuals. On arranging the dreams in classes and placing them in order of frequency this dream came second on the list. It was only exceeded in popularity by the dream of flying. Statistical inquiry is hardly necessary to establish these two particular habits of the dreaming mind. Many, perhaps most, people confess to either or both of these types; and the flying and falling dreams are important because they indicate very clearly that in dreaming there are at any rate some distinctly marked lines of tendency.

Hutchinson classed a number of other dreams under the heading "Trivial Inconvenience". A traveller is packing for his journey. The portmanteau will not shut; garments persist in strewing the floor. The clergyman in his pulpit cannot find his manuscript. The nightfarer's latchkey will not turn in the lock. Now these are dreams of "frustrated effort". People are trying to do things and failing. Without making a Procrustes' bed of this particular class, into which dreams are fitted by lopping or stretching or judicious squeezing, it seems reasonable to refer in this connexion to another of Hutchinson's classes—the Bogey Dream. It has been remarked that Christian's floundering in the Slough of Despond is a typical dream situation. Inability to move is a familiar feature of nightmare. The feet may be mired in mud or clay, or stuck in pitch or treacle ; the victim may be glued to the spot by fear or bound to a stake or pinned like a cockchafer or fastened by any other device in nature's repertoire. In all cases there is the same horrible powerlessness. In the genuine Bogey Dream we are not only unable to move but pursued by some dread monster. Sometimes the situation is reversed into an irresistible drawing towards some dreaded person or object. This constitutes another class of dream. It is thus possible to cross-classify through three of Hutchinson's classes in terms of the element of "frustrated effort".

General inquiry confirms these statistics. Many people confess to the dream of "frustrated effort," and, very significantly, frequently confess to its trivial forms. The failure is often in matters that are normally easy of performance. A common incident of daily life is reproduced in the dream with an unsuccessful attempt apparently deliberately introduced into it. It seems possible, indeed, to recognise a subspecies of Professional Nightmare in which the victim attempts some part of his daily routine and fails hopelessly. The professor cannot find his laboratory ; the analyst cannot perform his test ; the clergyman cannot find his place. Here the dreamer fails just where, in real life, he is most competent.

Investigation, then, seems to give reasonable assurance that there is a definite, specific type of dream in which the dreaming consciousness displays a marked tendency to introduce the element of failure. This tendency is still more clearly marked by the apparently anomalous character of the "frustrated effort". The mastery of the real situation contrasts sharply in so many cases with incompetency in the dream that the dreaming consciousness must contain some definite tendency to insert the element of frustration. This tendency must repose upon some cause —upon some characteristic of the dream state. What is this cause? The following suggestion endeavours to answer this question.

Dreams are largely composed of memories, but these memories are employed in different ways. Sometimes they provide the raw material for an entirely new situation. Readers of Wilkie Collins' *Armadale* will remember a skilful analysis of a dream into components derived from incidents in the life of the dreamer. Sometimes a block of memory, an incident or situation, is practically reproduced as such in the dream. The typical dream of "frustrated effort" is such an en bloc reproduction of a familiar situation, into which the element of failure is inserted. In a cricketing dream of this type the batsman dreams that he is bowled. He stands near the wickets in the open space of the cricket field ; he is aware of the fieldsmen around ; he takes his stance ; he sees the bowler run towards him and deliver the ball. Now the visual representation is rarely very complete. It is usually vague and shadowy compared with the actual impressions received through waking sense. But, though it is a sketch of or excerpt from reality rather than a complete picture of it, it is usually adequate. The batsman's dream-picture is sufficient to convince him that he is where the dream says he is and doing what the dream says he is doing. The visual representation is adequate—it renders the situation imperfectly, but it suffices to make it appear real.

The critical instant is the moment of approach between bat and ball. Both in real life and in the dream there are two alternatives—disregarding subsidiaries like tips and snicks. Either bat meets ball fair and square or—it does not. In this particular instance a characteristic sensation announces success, while its absence intimates failure. Avoiding psychological niceties, this sensation can be described as "arm-shock".

The batsman feels he has hit or knows he has missed. If the dreaming consciousness have difficulty in reproducing this particular sensation the dream will naturally arrange itself into a failure to hit—conforming, as far as possible, to the data at disposal. Its absence in real life informs the batsman he has missed—he draws precisely the same conclusion in the dream. The visual representation naturally follows the cue of the absent sensation and the batsman sees, or may see, the actual flying of his stumps.

The nature of the proffered suggestion is now coming into view. The indicated explanation of the cricketer's nightmare is connected with a particularly emphatic example of a set of sensations that, it is suggested, play an important part in the dream of "frustrated effort". In comparing the dream with reality we must consider the total psychical situation. There is no need, in the present instance, to use terms such as "subconscious" or to be meticulous in psychological classification of sensations. It is enough to remember that in our conscious field, at any moment, there is a background and a foreground. Certain elements, ideas or sensations, or whatever they may be, are more prominent—more, as it were, in the direct line of sight. Others are more in the shade—more removed from attentive regard. When we move or act there are in the mental background certain more or less dimly perceived sensations derived from our moving parts. The professor dreams that he wanders through the university passages, unable to find his laboratory. The visual representation of the scene is probably vague and usually rather kaleidoscopic, but it is, as in the cricket dream, sufficient to convince the savant that he is in his familiar haunts. It is possible that the somewhat ragged, shifting visual imagery may, in some dreams, assist in inducing perplexity and thus support the tendency to dream of failure. But the visual imagery is not the complete psychical situation of waking life. There are "background" sensations received from the moving limbs, from contacts between foot and ground and the like. The psychical situation is only complete when these are present. Since the professor is not actually walking in the dream these "background" sensations can only be present if the dreaming mind is able to reproduce them from memory. If they cannot be reproduced then the dream situation is incomplete. The foreground of consciousness is adequately rendered by the visual representations, but the background is missing or inadequate. The situation will SEEM right to the dreamer but it will FEEL wrong. The feeling of wrongness naturally connects with the end of the professor's endeavours, for the mind's attitude is essentially anticipatory, and the dreamer falls inevitably into a "frustrated effort". It is suggested that the dreaming mind IS unable, or often unable, to supply the "background" assemblage of sensations derived from touches and limb movements, and that this inability is the main source of the tendency, often realised, to dream of failure in attempt. It may be noted that the "background" sensations might be expected to drop out most completely in the dreaming mind's imperfect reproductive effort.

An analyst dreams he cannot perform his tests. By a convenient synechdoche the raising of the reagent bottle to the testing tube may be taken, as one part of the procedure, to represent the whole. In real life the attention is focussed for the most part on visual elements, on the expected appearance, for example, of a precipitate. But an essential part of the psychical situation is composed of sensations derived from movements of the arm. Probably the touch of the reagent bottle on the fingers is also a significant item. If the operator be supposed to be suddenly deprived of these sensations, recessive in the background of his consciousness, it is easy to understand that a feeling of bewilderment and failure might arise. There would be conflict between what is seen, bottle, tube and dimly perceived surroundings, and what is not felt—if it be not too Irish to speak of a conflict with an absence. There would be confusion and a sense of wrongness and failure. Again it is suggested that the dream performs for us just this psychological experiment. The reproductive powers of the dreaming mind fail just where it is reasonable to suppose they would be least—they drop the conscious background appropriate to the situation and the dream resolves into a "frustrated effort".

Prof. Mourley Vold of Christiana has made some interesting observations on the relations between dreaming and the positions of the limbs. For instance, a curved foot during sleep may produce a dream of pirouetting on the toe—roughly corresponding to the sensations received from the curved foot. We may note in this connexion that in the dream of flying the subject often floats in a prone position. This corresponds to the actual sleeping posture. If we accept Vold's suggestions we conclude that if the general arrangement of the body during sleep is such that the dreaming mind can adopt an adequate supply of appropriate "background" sensations the dream will probably not involve any element of frustration. For instance, if the sleeping analyst have his finger-points closed on his palm the dreaming consciousness might be able to supply the necessary "touch" of the bottle and avoid the sense of failure. The suggestion here offered applies more particularly to those cases where the general bodily conditions do not form an appropriate context for the dream. If the body remain still and prone during a dream involving walking or turning a key or lifting a bottle, or packing a portmanteau or wielding a cricket bat, the dreaming mind has to depend on reproductive memory for an appropriate supply of "background" sensations of movement or touch, and the suggestion is that the element of "frustration" often appears because the dreaming consciousness is unable to reproduce this supply in an adequate manner.

The tendency of the dreaming mind is thus, according to the present suggestion, often towards "frustrated effort" because of its frequent inability to reproduce with completeness the psychical situation corresponding to the real event. It finds most difficulty in an adequate rendering of the sensations normally in the background of consciousness—sensations derived from our movements, various feelings of touch and the like. This imperfect reproduction leads to a feeling of confusion or wrongness that finds expression in the failure of our attempts. It is probable that this tendency is always more or less present, but it may be suppressed or overruled in various ways. Sometimes the dream so suits the bodily posture or is so adapted to such sensations as it can receive, that the tendency hardly exists at all. It may be so over-riden by the insistence of the other elements of the dream that we are compelled to accept the situation in spite of its imperfect rendering. But from time to time the dream situation is so out of harmony with our bodily posture and general sensational condition, and the mind is so unable to fit the background of consciousness with appropriate elements, or even to supply a more prominent sensation like the "arm-shock" of the batsman, that we are thrown into a mental confusion and dream of "frustrated effort".

Joshua C. Gregory.

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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—ANALYSIS OF THINKING. (II.).

By W. E. Johnson.

Only a few words must be here interpolated in introducing the topic of the logical *conjunction.* A construct in which predications are united by logical conjunctions constitutes a compound predication, and must be treated in connexion with *negation.* A predication involving conjunctions and negations will be termed a *conjunctional* function of its constituent predications. Thus the conjunctions *and*, *or*, *if* yield respectively the conjunctive, alternative, and implicative form or function. The details of the theory of conjunctional functions belong to the preliminaries of formal logic and cannot be entered upon here. It is only necessary to remark that conjunctions—like *ties*—are, properly speaking, not genuine constituents, but merely formal elements. The same holds of logical *punctuation*, by which the bracketing and separating of sub-constructs constituting a complex construct are indicated—another topic upon which space forbids us to enter.

In discussing the logical forms of construction, we will next consider the import of the substantival prefixes—a, the, some, every, etc., which I propose to call *selectives* or *applicatives.* An applicative is always prefixed to a general substantive name; and an applicative may be defined to be a non-characterising determinator of application. Applicatives are sometimes classified by grammarians under adjectives: but an adjective proper, when prefixed to a general substantive name, restricts the range of application by a *characterising* differentia, whereas an applicative determines application otherwise. The first applicative to be considered is the indefinite article *a*. In some languages this article does not exist;—a fact which may be explained by defining the indefinite article to be the *undetermining applicative*. This applicative is directly opposed to the *uniquely-determining applicative*, expressed most generally by the definite article *the*. The most important of the remaining applicatives are the *distributives*, *every* and *some*, which may respectively be termed conjunctive and alternative, since the former condenses a conjunctive, and the latter an alternative reference. For example: "Every one of the twelve chosen disciples was a Jew" yields the *conjunctive* proposition—"Peter *and* John *and* James *and* . . . was a Jew"; and "Some one of the twelve chosen disciples was a traitor" yields the *alternative* proposition "Peter *or* John *or* James *or* . . . was a traitor". The same interpretation holds when the substantival reference cannot be exhausted enumeratively; as in "Every one of the points on the sphere S is at distance *r* from the centre O"; or "Some of the points on the line L are at distance *r* from the point P". Again, the familiar forms of proposition "Every man is fallible" "Some men are foolish" yield, respectively, conjunctive and alternative implications. The strict use of the article *a* as the undetermining applicative, must be distinguished from that use which is more unequivocally expressed by the phrase "a certain". The simplest use of the phrase "a certain" is where it serves to introduce an object to which we may return in thought, and in such return employ the article "the". For example—"A certain boy lived in a forest, and this (or the) boy planted a bean-stalk". When the phrase "a certain" is followed, in this way, by "the" or some equivalent, the former may be called the introductory indefinite, and the latter the referential definite.

We proceed, then, to the consideration of the *unique* selective, of which there are several variations, the connexions between which must be carefully inspected. Before discussing the question of a unique selective, let us consider the more general topic of a unique *name*. A unique substantive-name will be illustrated by "Peter" or "London," a unique adjective-name by "cold" or "rigid". The use of names such as these presupposes a process of unique identification. In however simple or complex a manner this process of identification may have been effected, the *use* of the name is independent of this presupposed process of identification. A name used with literally no indication of any presupposed process of constructive identification may be called a *proper* name. Such a name must always be *introduced* with an indication of some process of constructive identification, by means of which the application of the name may be understood by those who use it to be the same as that determined by the constructive process. Thus, when we hear that "the Prime Minister of England in 1914 was Asquith," we see that the name Asquith, as distinguished from the complex name standing as *subject* of the proposition, is a name which does not indicate any process of constructive identification. In working out logical systems of symbolism, it is an invariable custom to select letters such as a, b, x, y, s, p, to denote uniquely determined objects. These symbols do not indicate any process of construction by which their application might be uniquely determined; and, in their further use, the constructions into which they enter are unaffected, however their unique application may be—or may have been—determined. They are often at first introduced in the construction of general formulæ, and later are *applied* to denote this or that defined construct. In this case the process of constructive identification *follows* the introduction of the symbols; but in other cases, specific symbols are introduced *after*, instead of before, the process of constructive identification has been indicated. Whichever of these two methods is adopted, we see that the symbols are *used* without any reference to any process of construction, and that, therefore, they have all the characteristics of the proper name. The fact that in symbolic systems many symbols are introduced *before* any indication of constructive process has been given, has led logicians to the mistaken view that the proposition that is symbolically the simplest—*viz.*, that in which the only substantive-names and adjective-names are proper names—is logically or psychologically the earliest. We hold, on the contrary, that the *proper* name must be defined in use always, ultimately, by means of a *descriptive* name, in the wide sense of the term descriptive. More primitive than either of these is a name which can only be expressed by the prefix, "a certain," which is a special selective, not generally distinguished from the indefinite article. In fact, this selective seems to blend the characteristics of the unique "the," and the alternative indefinite. Phrases which involve "a certain" do not convey to the hearer any process of identification by which the thinker has determined the reference. Therefore, although, for the thinker "a certain" stands for a unique selective, for the hearer it is merely an alternative indefinite. The exclamation "Thunder!" regarded as an assertion, is formless as regards substantival reference, and could only be linguistically expressed somewhat as follows: "A certain manifestation has the character thunder". When the manifestation about which such an assertion has been made is referred to again, language adopts what we may call the referential article "the" or "this". Thus when we speak of *the* object which has been just experienced by me, or about which I have just been thinking or speaking, or in reference to which a certain proposition has been put forward, then, in every case, we are using a descriptive phrase (in the widest sense of the term) which indicates uniquely the reference intended. Now names constructed in this manner may be called referentially unique and be regarded as a special class of descriptively unique names. One familiar case of their occurrence is in narratives—fictitious or historical. In order to indicate unambiguously the reference intended, such phrases as "the latter," "the former," "celuici," "celuilà," "hic," and "ille" may take the place of "the" as indicating referential uniqueness; and again the referential pronouns "he," "she," "it," perform the same function. These devices must be supplemented in a continued discourse by the use of proper names, adopted either for permanent application, or for merely temporary and contextual reference. What is effected in narrative by the proper name is secured in symbolic systems, mathematical or otherwise, by arbitrary symbols such as a, b, x, y, which are understood to indicate unique identification where the *same* symbol recurs in the *same* context. Whatever device may have been adopted, we may speak of the uniquely determined object as the *selected* object.

A construct involving substantives and adjectives, united by characterising and coupling ties, and by logical conjunctions, may be called a *descript*. The strictly undetermining applicative marks the *undetermined* descript. Consider the undetermined descript "A child afraid of a dog"—which is equivalent to "A dog frightening a child". Here, such a component as "a dog" or "a child" (which is of the general nature of a substantive) will be called a *descriptum;* and such a component as "afraid of a dog" or "frightening a child" (which is of the general nature of an adjective) will be called a *description*. The presence of the indefinite article indicates undeterminedness whether it be of the descriptum or of the description. But when, in place of "a dog" we substitute "a certain dog" or "some dog" or "every dog," then instead of the undetermined description "afraid of a dog" we obtain a *determined description*. Again, if we substitute for "a child" "a certain child" or "some child" or "every child," then we obtain a *determined descriptum.* Consider for instance "Some children as being afraid of every dog," or again "Every dog as frightening some child". In the former case we have the determined descriptum "some children" and the determined description "afraid of every dog"; in the latter case we have the determined descriptum "every dog" and the determined description "frightening some children". These examples illustrate the principle that a descript becomes determined by means of a separate and independent determination of the description-component and of the descriptum-component. In other words, the description is determined *without reference to the descriptum,* and the descriptum is determined *without reference to the description.*

Having so far indicated the distinction between the undetermined and the determined descript, we must consider the distinction in mental attitude to which the transition from the one to the other construct may lead. The mental attitude adopted towards the undetermined descript is that of mere apprehension. In passing to the determined descript we have passed from the attitude of mere apprehension to that of *proposing;* and the construct so obtained is therefore called a proposition, towards which we may be explicitly preparing to adopt an attitude of interrogation. We may compare the term "proposition" with "supposition": whereas the former suggests the preparation for a *direct* interrogative attitude, the latter suggests the preparation for an *indirect* interrogative, in which we consider the consequences which would be entailed by asserting the proposition in question. Thus the same construct might be called either a proposition or a supposition according as it is taken up in the attitude of proposing or of supposing. In the same way many terms, such as presumption, assumption, presupposition, and so on, stand for the same construct—that might be called a proposition—towards which we are adopting one or other of the various attitudes of presuming, assuming, presupposing, etc. Thinking, as so far analysed, consists in the apprehension of a quality as characterising a given object; but we must recognise another aspect of thinking which goes beyond *mere apprehension.* What I have here called mere apprehension has been usually contrasted with *belief,* and it is agreed that belief necessarily *involves* apprehension. Now the object of belief is called a *proposition,* so that a proposition may be defined as an object of *possible* belief;—possible, because while the object of belief is always a proposition, the proposition may be merely apprehended without being believed; or it may be entertained in some attitude opposed to belief, such as disbelief or doubt. To doubt a proposition implies that we neither believe nor disbelieve it, while belief and disbelief, as opposed to doubt, have in common the characteristic that may be called assurance. Thus there are three opposed attitudes towards a proposition included in the distinction between doubt and assurance; the latter of which may be either (assured) belief or (assured) disbelief, and the former of which appears to be susceptible of varying felt degrees.

We must consider in further detail what is involved in converting an undetermined descript into a proposition, beyond the fact that all the references must be determined. Returning to the principle that a descript becomes determined by means of a *separate and independent* determination of the description-component and of the descriptum-component, it is to be noted that this mutual independence effects a severance between the descriptum and the description, which are therefore united in the proposition—not only by the characterising tie but also by what we may call the *assertive tie.* The blending of the assertive tie with the characterising tie is expressed in language by the transition from the participial or relative clause to the finite or declaratory form of the verb. Thus in passing from "a child fearing a dog" to "a child fears a dog," the characterising tie joins the same elements in both cases, but is, in the latter, blended with the assertive tie. That the assertive tie is blended with the characterising tie is further shown by the modifications "is-not," "may be," "must be," by which the verb "to be" is inflected, in order to indicate variations in the assertive attitude. The copula "*is*" of traditional logic is now seen to be a blend of the characterising with the assertive tie.

We thus see that the proposition, as such, is a kind of construct to which we may stand in a unique kind of attitude, determinable in more or less opposed modes. These different modes may be termed *assertive*, and the several specific determinations of the (generic) assertive attitude are known as asserting, denying, supposing, doubting, and so on. Now any assertive attitude is an occurrent relation of the thinker to the proposition—regarded as a *whole*—and not a relation to its parts. Thus the term proposition can only be defined by reference to the notion of an assertive attitude. As so defined, a proposition may be conveniently termed an *assertum; i.e.*, the kind of construct towards which we may adopt one or other of the variable modes of the assertive attitude. Now when G asserts or doubts or denies that "Everything [or something] that is p is q," his assertive attitude is directed to the proposition as a whole; and this relation to the proposition as a whole involves *the relation of apprehension* to the component adjectives p and q. We have to examinine the question whether this entails a relation to the descriptum—Everything that is p. Compare the above statement that "G asserts that everything that is p is q" with the following: "With respect to everything that is p, G asserts that *it* is q". In this latter case G stands in a definite relation to the descriptum—Everything that is p. The distinction between the two cases may be made clear by several considerations. Thus, let us construct a syllogism by introducing a minor premiss. In the latter case, we should take as minor (say) "This is p" and infer that "G asserts that *this* is q". But, in the former case, the required minor would be "G asserts that this is p" in order to reach the same conclusion. In fact, premisses can only be joined to elicit a conclusion, when they are put together at the same time by the same asserter. This was illustrated explicitly in the case of G's two assertions above; but it is implicitly involved also in the other case, where the two premisses must be understood to have been asserted by the same person (say H). Another way of emphasising the distinction between the two cases is shown by substituting for q the negative not-p. We should then have to contrast (1) "G asserts that everything that is p is not-p" with (2) "With respect to everything that is p, G asserts that *it* is not-p". The former is a case in which G would be guilty of self-contradiction, the latter merely a case of error on G's part. Now the above assumes that the reference intended by the word 'this' or by such a phrase as 'Every thing that is p' or 'Something that is p' can be taken as a component out of the proposition and objectively identified for different thinkers or even for the same thinker at different times. This in general is not possible. Hence we are led to the problem of what it is that can be universally identified as object of reference.

Having so far considered the proposition in its mental or *subjective* aspect, we have next to examine it in what may be called its *objective* aspect. Whereas a proposition is related subjectively to *assertion*, we shall find that it is related objectively to *fact*. Our conclusion, briefly expressed, is that any proposition *characterises* some fact, so that the relation of proposition to fact is the same as that of adjective to substantive. The word fact is more or less appropriately associated with propositions of different kinds. First, we have propositions characterising particular events; secondly, propositions which generalise with respect to the character of events ; thirdly, formal propositions which enter into pure logic and pure mathematics. The word fact is most naturally associated with the first kind of proposition ; it is applied less appropriately to the second ; and hardly ever to the third. The first two kinds of proposition may be called existential. The universal feature of existential propositions is their implicit reference to temporal connexions ; and a class of them have the further common feature of implicit reference to spatial connexions. We have taken as the most primititive form of proposition : " a certain manifestation of thunder has occurred ". We may say that this proposition characterises (correctly or incorrectly) a certain occurrent fact. In this case there appears to be no distinction between what is meant by a certain manifestation and a certain fact ; in other words, we may indifferently say that the proposition 'it thunders' characterises the fact, or that the adjective 'thundering' characterises the manifestation. Now the barest form of proposition would be expressed thus : a certain manifestation has occurred. We may assume that the circumstances in which this proposition is asserted are such that—the reference (indicated by the phrase 'a certain ') being understood —the assertion is indubitably true. We shall find that the word *fact* can never be used except in association with a residual proposition which must be assumed to be *true ;* thus the association of *fact* with *true* proposition is precisely analogous to the association of what is ultimately *given-to-be-characterised* with what is *real.* Again passing from the barest form of proposition to one in which character is to some degree determined : a certain manifestation of thunder has occurred. This proposition cannot, like the previous one, be assumed to be true. It is, however, a further specification of the previous proposition which we said could be assumed to be true and thus to express a fact. Now, when we proceed to speak of the *fact* that a manifestation of thunder has occurred, and supplement this by a further predication—*e.g.*, by stating that this *fact* has certain consequences, this last statement could not be true, and might even be regarded as non-significant, unless the proposition expressing the fact of the manifestation being one of *thunder* had been true. Starting then with the residual fact expressed in a proposition, at each stage in the process of characterising the fact, we construct a proposition which must be taken to be true as a condition required in order that any further characterising of the fact may be true. It is in this way that the term fact comes to be inevitably associated with a *true* proposition, rather than with a proposition either true or false.

Now we have said that a proposition characterises a fact; and from this we see that a proposition could not be either true or false unless ultimately we could characterise a fact truly, as in the bare proposition: a certain manifestation has occurred.

Let us illustrate the way in which facts enter as constituents into propositions by the following:—

"That, during the Commonwealth, the dominance of Puritanism, which followed upon the execution of Charles I. in 1649, produced by reaction the evils of the Restoration period; largely accounts for the milder form of opinion and conduct, adopted by the reformers during and after the revolution of 1688, when the power of the Stuarts was finally destroyed."

This sentence, the understanding of which essentially requires attention to punctuation, is the expression of a proposition characterising one large fact, constituted out of many sub-facts connected in various ways illustrating temporal or causal nexus. We will give some analysis of this sentence for purposes of exposition. Take the proposition that "Charles I. was executed"; this, we say, characterises a certain fact. How then can we identify the fact previously to or apart from such characterisation? Let us suppose that a spectator who was present says, "Something is happening," and asks "What is happening?" His assertion, which expresses a bare fact, is indubitably true; and his interrogation is a request for a characterisation of this fact. But many intermediate steps, in which the fact is partially characterised, might be interpolated before we reach the proposition that "Charles I. was being executed". It is a condition for the truth of this proposition that each of the propositions into which it could be analysed should truly characterise the sub-facts. We may now dispense with this analysis and take the proposition as it stands to truly characterise the fact expressed in the assertion "Something is happening". It is important to note here, what is further involved in the relation and distinction between fact and proposition, that the same fact may be truly characterised in very many different propositions the combination of which would constitute a true characterisation *of fuller determinateness* than any of the partial propositions. Moreover, without adding on one proposition to another, we may render any proposition more determinate, and so characterise the same fact with different degrees of precision. Hence we cannot speak of *one* proposition corresponding to *one* fact, since there may be many true propositions corresponding to the same fact. We proceed to consider the proposition "Charles I. was executed in 1649". This is a further specification of the fact characterised in our previous proposition. It is what we have called an external characterisation of the fact. In considering the logical punctuation, we must put the dating outside the bracket expressing the fact that Charles I. was executed. But in predicating the date 1649, we are not predicating a character of the *proposition* that "Charles I. was executed," but of the *fact* (characterised by the proposition) that Charles I. was executed. This illustrates the importance of distinguishing as to whether it is a fact or a proposition that enters as a constituent in a construct; because the same verbal expression is used for both. Thus Charles I.'s execution took place in 1649 is a predication about a fact; whereas, Charles I.'s execution is recorded in Macaulay's history, is a predication about a proposition. Here again the notion of a proposition cannot be explained, except in terms of assertion; thus, it is implied that Macaulay *asserted* that Charles I. was executed; and it may be further suggested that Macaulay's assertion is a ground for our asserting the same proposition. Similarly when we say that one proposition *implies* another, we mean that the assertion of the one would justify the assertion of the other. Again, when we predicate of a proposition that it *is* true, we mean that any person's *assertion* of the proposition *would* be true. From this we see that such an adjective as 'true' or 'false' or any relational adjective such as 'implying' or 'compatible with' is commonly predicated of a proposition (and not of an assertion), only because the truth or the falsity or the relation of implication or compatibility holds universally (if at all), independently of the person asserting or the time of his assertion. Again, we may predicate of the *proposition* that Charles I. was executed, that the logical justification for its assertion is human testimony, or that it is approximately certain—in contrast to other propositions of which we might predicate that their assertion is justified by general experience, or again that they are highly dubious Such predications illustrate two points; namely, that a predication about a proposition is to be interpreted ultimately as a predication about an assertion; and that the adjectives (including relational adjectives) predicable of a proposition are of a different kind from those predicable of a fact. One of the essential characters predicable of a fact is its date, which involves indirectly a temporal relation to other facts, and leads to specific propositions, in which temporal relations to assigned facts are predicated. Again the predication of a temporal relation or connexion between one occurrent fact and another may develop, in a further process of factual characterisation, into the predication of causal relation between the two occurrent facts. The generalisation of such predications is what is called a causal law. In formulating the causal law, reference is made both to the internal characterisation of the occurrent facts and to their external characterisations, *i.e.*, the temporal and spatial connexions between them. In saying that adjectives predicable of assertions are of a different kind from those predicable of facts, we must not forget that an assertion itself is an occurrent fact, and that therefore the same kind of adjectives that are predicable of occurrent facts in general are predicable of any assertion, regarded as a mere fact. In particular, an act of assertion may be dated, and hence enters into temporal relations with other facts ; and, when the act of assertion is attributed to a certain person, we can predicate causal relations between it and other facts of experience that may have occurred in the life of the person. We must therefore more precisely define the distinction between what may be predicated of an assertion as a mere psychical fact, and what may be predicated of the assertum or proposition asserted. A predication about a proposition must be defined as a predication primarily about an assertion, but one which holds independently of the time of the assertion and of the person asserting. Thus, when any predication about one person's assertion at one time necessarily holds of the same or another person's assertion at the same or at another time, this must be because the content of the two assertions is the same ; and hence the predication, which is primarily about the assertion, is transferred to the proposition, or that which is asserted. If, on the other hand, the predication about an assertion holds only on account of the temporal and causal circumstances under which the assertion is made, then such predication is about the assertion as a mere pyschical fact. For example, if a person's seeing of lightning causes him to assert that there will be thunder, this predication of causal relation is one about the assertion as a mere psychical fact. If, on the other hand, we predicate about the assertion of thunder that it would be justified whenever an assertion of lightning were justified, then we are predicating about the assertion of thunder a relation which holds independently of the person making the assertion and of the time at which the assertion is made. With regard to the *time* of an assertion in this last reference, it is of course obvious that the time at which the assertion is made does not mean the same as the time at which the asserted fact takes place. It is obvious that the fact of assertion is different from the asserted fact; and hence that the time at which the fact of assertion occurs may be different from the time at which the asserted fact occurs. When we state, therefore, that a predication about a proposition holds independently of time, we mean independently of the time of the act of assertion, not independently of the time of the asserted fact, which latter is of course part of the content of the proposition. Turning to the historical illustration, it will be seen that the constituents of the complex proposition are *facts*, not propositions which characterise the facts; and that the adjectives (including relational adjectives) which are predicated of the facts, are in every case temporal or causal. Taking our historical example, we will resolve it so as to show briefly its constituent facts, and the points in our discussion which it illustrates. The constituent facts are as follows:—

(*a*) A commonwealth was established (after 1649).
(*b*) Puritanism was dominant (after 1649).
(*c*) Fact (*a*) was simultaneous with fact (*b*).
(*d*) Charles I. was executed (in 1649).
(*e*) The Stuarts were restored (after 1649).
(*f*) The restoration of the Stuarts was attended by certain evils.
(*g*) Fact (*b*) caused fact (*f*).
(*h*) A revolution occurred (in 1688).
(*k*) The power of the Stuarts was finally destroyed.
(*l*) Fact (*k*) occurred after fact (*h*).
(*m*) The opinion of the reformers was milder in 1688 than in 1649.
(*n*) The conduct of the reformers was milder in 1688 than in 1649.
(*r*) The fact that fact (*b*) caused fact (*f*) caused facts (*m*) and (*n*).

This brief summary illustrates first, that the temporal order of assertions is not necessarily the same as that of the facts asserted. Secondly, that the logical conjunctions uniting assertions may be transferred to the facts asserted without change of import. This may be expressed by the following mode of bracketing: the *joint* assertion of (fact *m* and fact *n*) is equivalent to the assertion of the *joint* fact (*m* and *n*); and so of the other facts *a*, *b*, *d*. . . . Similarly, although our example does not illustrate any conjunction but 'and,' the *alternative* assertion of (fact *m* or fact *n*) is equivalent to the assertion of the alternative fact (*m* or *n*). In speaking of the alternative (*m* or *n*) as representing a *fact*, we are recognising the principle that any characterisation of a fact may be more or less determinate; thus the characterisation of a fact as m is less determinate than the characterisation of it as (m and n) and more determinate than the characterisation of it as (m or n). The *fact*, of course, may be said to be absolutely determinate, but m and n here—as elsewhere—stand for the *characterisation* of the fact. In the third place, the summary illustrates the principle which I previously expressed as follows: At each stage in the process of characterising a fact, we construct a proposition which must be taken to be true, as a condition required in order that any further or more determinate characterising of the fact may be true. Thus each of the propositions into which we resolved the sentence, *where a date or temporal characterisation is inserted*, is a proposition which would not be true, and might even be considered non-significant, unless the *undated* proposition were assumed to be true. Again each of those propositions in which we assert the relation of simultaneity or before or after, could not truly characterise the larger fact unless the minor facts themselves, between which the temporal relation is asserted, have been truly characterised in the *constituent* propositions.

So far we have restricted our discussion of facts to *occurrent* facts; we have now to consider whether the term fact can be appropriately used, in relation and contrast to proposition, in a wider sense. Compare the proposition "Charles I. is being executed" with the proposition "a is greater than b". The former may be said to be based upon the less determinate proposition, "Some kind of thing is happening there and now"; and upon the interrogation, "What kind of thing?" It may therefore be expressed: "What is happening there and now is the execution of Charles I.". In the same way, the latter proposition may be said to be based upon the less determinate proposition, "Some relation of magnitude subsists between a and b"; and upon the interrogation, "What precise relation of magnitude?" It may therefore be expressed: "The relation of magnitude of a to b is as greater than to less than". In both these cases the question asked refers to a subject-term that is presented with the determinateness required for a determinate answer. In short, the subject term is assumed to be determined uniquely. In the spectacular proposition, the words 'there' and 'now' may be accompanied by actual pointing, so that the same reference may be understood by the speaker and hearer: this is an example of a unique description, the uniqueness of which is not secured by mere verbal phrases that could be understood apart from context, but mainly by the gesture which accompanies verbal expression. Granting that the reference in the subject-term is thus unique, a true answer might be given in more or less different forms of proposition; or, as we might say, the same uniquely determined fact may be truly characterised from various different aspects. Similarly the subject term—*viz.*, the relation of *a* to *b*—in the arithmetical example, is uniquely determined by a description intelligible apart from context (though again here *a* and *b* might be names of objects presented to the senses and pointed at). Hence the answer required is determinate. Here again a true answer might be given to the question, "What specific relation holds?" in more or less different forms, for example, "As 5 to 3," instead of "As greater than to less than". Thus the arithmetical proposition characterises, we may say, a fact, namely that *a* has to *b* some relation of magnitude; and this fact is given, with a relatively indeterminate characterisation, to be more determinately characterised.

We have shown that to the same question of fact various different true answers may be given; this leads to the problem of false propositions. We may begin by defining a true proposition as one which is in accordance with a fact. From this definition it would seem natural to define a false proposition as one that is *not* in accordance with *any* fact. This inference would follow if, in defining a true proposition, we had used the word "a fact" in the sense of "some fact," *i.e.*, as an alternative indefinite. Now in order to bring out the *relation* between truth and falsity, we must speak of the true proposition as being in accordance with *a certain* fact, and the (related) false proposition as being in *discordance* with *the same* fact. The truer definition, then, of a false proposition is that it is one which is in discordance *with a certain fact.* If we had defined a false proposition merely negatively, as being not in accordance with any fact, then the false proposition might be towards every fact in no one relation whatever, or in some relation—say parentage—to *some* fact, and in the relation say of cause to some other fact, and in the relation of say "greater than" to some third fact, and so on. There is indeed one relation in which a false proposition stands to *all* facts, namely the relation of non-identity; but, inasmuch as the same holds of true propositions, this will not provide us with the required differentia. This shows that the definition of a true proposition as being in accordance with *some* fact is incorrect, because if the subject of a proposition is not uniquely understood, a false proposition might be in accordance with some fact. For example, the proposition "This man is tall" might be false, and yet be in accordance with *some* fact. Thus taking the proposition "This man is short" to be true, the proposition that "This man is tall" would be in accordance with some fact, and could therefore only be pronounced as false when we had secured reference to the same fact in the two propositions, namely, the height of the same man. In short, it is obvious that in pronouncing the proposition "This man is tall" to be false, we do not mean that it is not in accordance with any fact, but that it is in discordance with a certain fact. Many propositions may be in accordance with the same fact, and merely because one proposition is in accordance with a certain fact, it does not follow that a different proposition relating to the same fact is false; there must be some positive relation between two propositions relating to the same fact in order that the falsity of the one should necessarily follow from the truth of the other. This positive relation is that the one is in accordance with, and the other in discordance with one and the same fact.

There are many pairs of terms which seem to present the same antithesis, such as true and false, affirmative and negative, acceptance and rejection, accordance and discordance, affirming and denying, etc. In my own view, there is, indeed, one single antithesis to which these expressions point. The consequence of this is that, in the attempt formally to define one pair of terms, we are apt to use another pair of terms, and are thus in danger of circular definition. Another difficulty in defining these terms arises from a certain ambiguity in the use of the word 'not'. For example, if we defined 'false' as meaning 'not true,' such definition would involve two mistakes; in the first place, it is only of propositions that 'not true' would concide with false; and in the second place, amongst propositions, the relation of the true to the false is not *merely* that they constitute two sub-divisions of propositions that are (taken together) exhaustive, and (taken separately) exclusive. In fact, any attempt literally to define the antithesis between true and false seems inevitably to involve the prior understanding of the meaning of the terms, and of their antithesis. I think we can best avoid circular explanations by not attempting to define the *general* meaning of the terms true and false, but rather by taking a pair of *related* propositions such that the truth of either of them involves the falsity of the other. In order that this relation may hold between two propositions, we may say in the most general case that they refer to the same fact; we then attempt to define the fundamental antithesis by means of the conception of accordance and discordance. We have already indicated that discordance does not merely mean non-accordance.

It will be found that the word '*not*' has a different meaning when prefixed to a substantive from that which it has when prefixed to an adjective; but it is only in the latter connexion that its proper significance can be understood. Language frequently supplies us with the negative prefix as part of the adjective word, for example, incompatible, dishonest, unusual, etc., but where ordinary language does not supply an adjectival prefix, we can always place 'non' before the positive adjective, as in non-identical, non-red. We ask, what is the relation of non-red to red? It might be answered that 'non-red' means 'non-identical with red'; but inasmuch as 'hard' also is non-identical with red, the assertion that a thing is 'non-red' would be compatible with the assertion that it is 'red,' if non-identity were the only relation which held between red and non-red. Again, if this were so, 'non-identical' would mean 'non-identical with identical'; but non-identical is also 'non-identical' with incompatible, or any other relational adjective; so that the same question arises upon the meaning of non-identical as upon the meaning of non-red. The relation of 'non-identical' to 'identical' or of 'non-red' to 'red,' etc., may be said to be that of *incompatibility*. This would seem to raise a question as to the relation of incompatibility to compatibility; since the prefix *in* here has the same significance as the more general prefix *non*. We can only say that 'incompatible' means 'incompatible with compatible'. This is equivalent to saying that incompatible cannot be defined; or, to put it otherwise, incompatible is just as ultimate a positive relation as compatible. In order, then, to assert that a thing is non-red, we must be able to assert that it has some quality—not merely non-identical with 'red'—but incompatible with red. The same applies to the relation 'non identical' itself; in order to assert that *a* is non-identical with *b*, we must be able to assert that it has some relation to *b* incompatible with identity. Now the only relation incompatible with identity is *otherness*. We ought, then, to have amended our original definitions, and substituted: the adjective red is *other than* the adjective hard; the adjective blue—which is an example of non-red—is *incompatible* with red; the relation 'other than' is *incompatible* with the relation 'identical with'. These three examples bring out the additional points that whereas 'other than' is the only relation incompatible with 'identical with, blue is not the only adjective incompatible with red; and that in stating that red is merely other than hard, we suggest that red is compatible with hard. Such adjectives as 'non-identical with,' 'incompatible with,' in which the negative is prefixed to the adjective-word, are legitimately used as positives whenever there is a *strictly dual* incompatibility. It is doubtful whether logicians have not been sometimes mistaken in supposing that all cases of incompatibility can be regarded as *dual* incompatibility, whereas this is the exception rather than the rule. Incompatibility in general has been technically termed contrariety; and dual incompatibility, contradiction. Now although the negative predication non-red can be treated, in purely formal processes, under the same rules as the positives red or blue; nevertheless, when we are examining philosophically the conditions necessary in order that such predications as non-red may have any import at all, we must conclude that such import is derived from incompatibility in general. The difference of function between the terms red and non-red is that, since red is comparatively determinate, non-red is comparatively indeterminate; the general rule being that of two contradictory terms, one positive and the other negative, one is indeterminate, and the other determinate in comparison. This rule follows from the fact that the total number of predications which are all mutually incompatible is generally considerable; and therefore if one of the terms includes a small number of alternatives, the other will include a large number.

We have now reduced the problem of the negative to the question of the nature of incompatibility. We had previously spoken of a pair of related propositions, one of which was in accordance and the other in discordance with a certain fact. That there are such pairs of propositions is the condition for conceiving and applying the relation of incompatibility. Thus, in examining the content of two propositions, we may discern that if one of them is in accordance with a certain fact, the other must be in discordance with that fact, without our knowing in the special case which of the two is in accordance and which in discordance; we express this relation by saying that the two propositions are incompatible with one another. The proposition which is in accordance we call true; that which is in discordance we call false. We affirm or accept the former, and we deny or reject the latter. We have said that affirming and denying are in the same antithesis as true and false; this, of course, does not mean that a proposition that has been denied is the same as a proposition that is false. What it means is that the denial of a proposition is equivalent to the assertion that the proposition is false; and that the affirmation of a proposition is equivalent to the assertion that the proposition is true. In other words, the attitude of denying or affirming a primary proposition is equivalent to the attitude of asserting the derived secondary proposition in which falsity or truth is predicated of the primary. Again, we have reduced the antithesis of affirmative and negative to that of accordance and discordance; but this does not mean that the affirmative proposition is that which is in accordance, and the negative that which is in discordance with fact. For instance, supposing a thing to be yellow, the negative predication 'not red' would be in accordance with the fact, and the positive predication 'blue' in discordance with the fact. That is to say, 'not red' is here in indeterminate accordance with the fact, 'yellow' in relatively determinate accordance, 'not yellow' in indeterminate discordance, and 'blue' in relatively determinate discordance. In extending this principle, it will be enough to take the two forms of proposition from traditional logic, "Every P is Q" and "Some P is non-Q". The fact with which one of these is in accordance is the same as the fact with which the other is in discordance. For example, the actual fact might be truly characterised by the proposition. "Every P is QU"; in this case our universal would be true, and our particular false. On the other hand, the fact might be truly characterised by the proposition, "Every PV is non-Q". In this case our particular would be true, and our universal false. In this example I have chosen for the proposition which actually characterises the fact, a proposition *more determinate* than the original proposition (universal or particular). This was done for the purpose of illustrating the general principle that the *fact* is always actually characterisable by a proposition that is (indefinitely) more determinate that any proposition which a mere human being could discover or even conceive. Thus, if "Some P is non-Q" is true, the actual fact will be more determinately characterised by a proposition that indicates, first, *which* amongst all the objects that are P are Q, and which are non-Q; and secondly, amongst those which are non-Q, which are characterised by some one quality incompatible with Q, and which by some other. Induction, indeed, is the process in which we try to approximate to such more completely determinate knowledge, by replacing the merely indefinite particular proposition of formal logic by a set of sub-universals, to each of which the proper determinate predicate is attached. Thus, "Every PV_1 is Q_1," "Every PV_2 is Q_2," and so on.

I have said that some logicians have in effect taken the relation of contradiction to be fundamental in place of contrariety. But many of the opposite school of logicians have apparently fallen into the reverse mistake, namely of attributing priority to the contrary in place of the contradictory; *i.e.*, they appear to have argued that we must always base our assertion of the contradictory upon a knowledge of the contrary. Now it is true that in many very important cases this is so; but in an equal number of equally important cases we are able to assert a mere contradictory or a relatively indeterminate contrary, before we can assert the more determinate contrary; and in any case we can *never* know the contrary in its complete determinateness. We must adjust the balance properly between these two opposite errors. On the one side, we maintain that our *conception* of the contradictory is based upon our conception of the contrary; on the other side, that our *knowledge* of the contradictory very frequently comes before our knowledge of the contrary. What I have maintained is that when we know that the contradictory holds, we know that *some* contrary must hold, but we do not necessarily know *what* contrary.

We must conclude by returning once more to the conception of a fact as that which the proposition characterises. We have seen that, in general, we cannot find any substantival or existential component of the proposition as an object that could be identified for all persons and for all times. But the *fact* to which any given proposition refers can be so identified. We may speak of one assertion and another assertion as characterising the *same* fact; and again of two assertions as characterising *different* facts. The fact, as determinandum for thought, can be objectively identified as the ultimate object of reference; while the proposition is the character more or less determinately apprehended as characterising the fact. The formula which finally expresses the blending of the assertive with the characterising tie is thus: The fact F asserted by the thinker T to be characterised by the proposition P.

II.—SOME OBSERVATIONS TOUCHING THE COSMIC IMAGINING AND "REASON".

(*Written October*, 1917.)

BY DOUGLAS FAWCETT.

IN responding to Prof. Stout's invitation to reply to critics of the *World as Imagination* I find myself in this fix. The longer and more important notices by Dr. Schiller,[1] Dr. Bosanquet,[2] Mr. Bertram Keightley,[3] and Mr. Douglas Ainslie,[4] raise very interesting issues but criticise, withal, only the general trend of the work. And other reviews, in the main very friendly, contain few considerations which would have weight with the experts who read this quarterly. In no case, so far as I am aware, has the detail of the new metaphysical venture been criticised. This being so, my task here will be to restate briefly the motives which led me to frame the hypothesis of the Cosmic Imagination and to reply at the same time to a few general criticisms which may prejudice its claim to be tested at length.

Ultimate all-inclusive reality, so runs the hypothesis, is best regarded as imaginal; as conscious activity whose content resembles what, as directly lived by us, we call imagining. It is not urged that the other aspects of human experience are "unreal" or "illusory," it is suggested that this imaginal aspect reveals the Eternal World-Ground less darkly than do the others, shows it to us less transformed in the guises which it takes on in the conflicts of time-process. The hour is such as to invite experiment. Many of us are tired of the old shibboleths. "All over Europe before the War," writes Dr. Schiller, "academic lecture-rooms only re-echoed, in all essentials and with minor or minimal variations, four great substantive voices of antiquity, two of them Greek, Plato and Aristotle, two of them German, Kant and Hegel, and philosophy, instead of advancing with the steady sureness of science, rehearsed only the old problems and the old debates. Nor was the situation materially different in America."[1] Bergson, it is true, had stirred thought with "Creative Evolution". But he had not dismayed the conservatives, and his doctrine of the *Élan Vital* failed to sound the depths of the World-dynamic. Bergson, shall we say, had discussed in terms of "life" a creative activity which we can unveil yet further, knowing it as we do intimately and from the inside in ourselves. My attempt at an advance was called for, not, as Dr. Bosanquet seems to think, to gratify a liking for novelty, but to remedy, if possible, existing failure. Current available hypotheses about the World-Ground proving unsatisfactory, someone had to take a risk and launch another. After all, philosophy has to progress by its votaries *imagining* novel solutions and applying them tentatively to the field of experience. Thus was born the imaginal hypothesis which we are to consider: a step forward, it may be, in a direction which has been indicated already, if darkly, by writers of such different types as the philosopher Frohschammer and the poets Shelley and Blake.

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[1] MIND, July, 1917. [2] *Hibbert Journal*, March, 1917.

[3] *The Quest*, July and October, 1917. "The Cosmic Imagination," "The Imaginal World-Ground".

[4] *The Observer*.

We are driven, then, to metaphysical experiment simply because the available rival hypotheses, on being tested, conflict with experience. Thus you desire, let us say, to retain idealism; idealism which need not, of course, be "subjective" and ought, indeed, to be as "objective" as the veriest neo-realist could desire. Well; you cannot rest in idealism as it comes to us from Hegel. The hypothesis that a dialectically-articulated "Reason" or Logical Idea is sole ground and "sovereign of the world"; that the realms of Nature and Mind are, as Hegel believed, just "applied logic," are "a particular mode of expression for the forms of pure thought," confronts insuperable difficulties and can have few, if any, thoroughgoing advocates to-day. The hypothesis, as I have urged at length elsewhere, is not elastic enough to be stretched along the whole front of empirical being. Dr. Schiller suggests that this "wildly whirling world" does not look much like a work of Reason "similar enough to ours to be reasonably called one!"

Schopenhauer (who proffered a very unsatisfactory rival hypothesis about the World-Ground), said much the same thing, while a revolt against the once honoured metaphysics of "Reason" marked the more mature thought of the plastic Schelling. To-day, to be sure, we still hear much of "Reason" from neo-Hegelians, but we note also that admirers of Hegel no longer man the trench in which their hero fought and died. They have abandoned "according to plan" the Dialectic, so indispensable to his position, and they treat of "Reason" and the "rational" in ways that mark, in fact, a most decided retreat. No longer is "Reason" the Hegelian sole 'substance,' 'energy,' and 'sovereign' of the Universe.[1] But modern thinkers who teach a Hegelism without Hegel are prone to be unclear as to what the time-honoured sonorous term "Reason," used in a metaphysical regard, actually means. Finding no clearly expressed and adequate meaning in modern Hegelistic literature I sought help by letter last May from Dr. Bosanquet who replied that for him, at any rate, "Reason" stands for "*nisus to unity*". Unfortunately this statement, while definite enough, leaves much to be desired. It is certain of course that Hegel would not have regarded a mere "nisus to unity" as sole 'substance,' 'energy,' and 'sovereign' of the world! But Hegel, it will be said, has been left behind and the "nisus" in question must be considered in a new setting. Well and good. There remain, then, the criticisms (1) that "nisus to unity" implies time-succession and can, therefore, be nothing basic in a Bosanquettian Universe which is supposed to transcend time; (2) that the terms between which the "nisus" holds are not themselves covered by this new definition of "Reason" so that, apart from the "nisus," they lie, perhaps, outside the alleged rational essence of the real. It is not enough for advocates of rationalism to stress the "order and connexion" of "things," unless the "things" ordered and connected are shown to have their roots in the "rational system" of the world. The whole-souled panlogist might protest that the completely "rational system" of Hegelism has been forsaken for one which is lopsided and incomplete. The "Reason" is no longer cosmic, no longer all-embracing, all-inclusive. On the other hand the Imaginal Hypothesis, as we shall see, provides fully for *conservative* "*order and connexion*" without crippling itself with the view that "Reason" is the basis of anything and everything that exists. Cosmic imaginal activity is expressed in "order and connexion," but its general character seems not to resemble closely the psychologic processes and results which we call

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[1] MIND, October, 1917.

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[1] "While it is exclusively its own basis of existence and absolute final aim it is also the energising power realising this aim, developing it not only in the phenomena of the Natural but also of the Spiritual Universe —the History of the World," is Hegel's attitude as expressed in the *Phil. of History* (Sibree's Transl.).

"reason" in ourselves and, further, it comprises also very much of the real that no sane man can call rational at all. It was in view of this domain of sub-rational fact that Hegel declared that Nature is too weak to exhibit "Reason" everywhere, that much present to our experience is without meaning. And assuredly the existence of lunatics or the Great War in a system, wherein the real is said to be rational and the rational real, is one of those things that "fellers," other than Lord Dundreary, may be pardoned for failing to understand. Such "appearances," in fact, declare the inadequacy of the experimental hypothesis concerned.[1]

The term "Reason" is used with such different meanings, vague and clear, that it is no longer suitable for philosophy without an explicit preliminary declaration of one's purpose in using it. Thus when Royce views it as "the search for truth as such"[2] he has apparently in view a movement in finite sentients. His Absolute lacks nothing, strives after nothing. But when Mr. James Tuckwell defines "Reason" as "the activity in us and in all things of the one all-inclusive, all-pervading Reality,"[3] he is looking beyond this and that finite sentient and considering Reality at large. The objection to this all-inclusive Reality being called "Reason" has been mentioned already. The Reality can hardly be sufficiently like the groping and stumbling reason, of which we have knowledge of acquaintance, to warrant such naming. The "activity" which Mr. Tuckwell has in view seems better symbolised by the elastic and inclusive concept of the Cosmic Imagining, which has room for all sorts of contents,—those for instance, realising a "reasonable" purpose of cosmic width and those also making for sub-purposive or "unreasonable" conflict and chaos. Still Mr. Tuckwell's "Reason" is not a name for that daisy-chain of pale categories which is supposed by Hegel to be somehow "specialised and developed to Nature and Mind" and which, only by verbal device, could be discussed as "active" at all. I cite his definition simply to point out what oscillations of meaning mark the use of a word, so fraught with menace to clearness in philosophical thinking.

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[1] One must add that "Reason" viewed as a Bosanquettian "nisus to unity" is very poorly illustrated by the attempt, say, of a moth to "unify" itself with a flame; an act which, as thwarting *purposive* living, must be classed as irrational if words are to subserve any tolerable function. Many kinds of "nisus to unity" are irrational in this sense. The fact that conservative connexions or 'laws' of nature are exemplified in these cases would not entitle them to be labelled rational. An "intelligible" connexion is not always an "intelligent" one!

[2] *The World and the Individual,* first series, p. 155.

[3] *The Quest*, July, 1917.

Suppose, now, that, ignoring later experiments, we take the system of Hegel as the typical philosophy of "Reason"—the system of the logical or rational IDEA. Then our proffered amendment is the system (so far as it is reducible to a system) of the imaginal IDEA, that is to say, a World-Ground which resembles more nearly what we call our "private imagining" than it does any other of the experience-aspects present to us. No attempt need be made, as on the too ambitious lines favoured by Hegel, to exhibit completely the 'eternal essence' of this Ground; sentients on our low human level cannot hope to explore the ocean of the infinite in this fashion. But something has been done if we are able to aver that the World-Ground is not unlike certain conservative and creative activity as felt intimately and immediately within ourselves. It is evident that this belief has considerable pragmatic value. Dr. Schiller's critical notice of the hypothesis makes this clear. He allows that the philosophy of the imaginal IDEA or Cosmic Imagining,[1] if it be a romance, is at least a consistent one. He agrees also that "all the other metaphysical explanations involve and presuppose" that imagining on which the hypothesis lays such stress. As Mill wrote, the limits of hypotheses are the limits of imagining. Most welcome too is his opinion to the effect that the Cosmic Imagining "*can really afford to be what other metaphysical principles falsely claim to be, viz., all-embracing.*[2] It can be represented as including, not only all reality but all 'unreality'. . . . Its elasticity and tolerance contrast very favourably with the proud and narrow-minded exclusiveness of the ordinary Absolutes, which always in the end ignore the reals of low degree, though they usually begin with a perfunctory parade of their inflexible resolve to absorb all finite things." I do not, it is true, regard Cosmic Imagining as an Absolute among the Absolutes of tradition, not arguing, for instance, toward a 'block-universe' and contending strenuously for the reality of time-succession and for novelty in every causal change. Nor, again, do I label it numerically either one or many; and surely not a barely

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[1] A reviewer in the *Oxford Magazine* takes exception to imagin*ation* being regarded as the World-Ground and I must allow, seeing that both the conservative and creative aspects of the Ground are discussed as active, that it would have been better to write of the "World as Imagin*ing*". But there was the public to be considered and in pioneer work one is wise not to take more liberties than one must.

[2] Italics mine.

'single principle' of reality, since we have to take note of a live plurality in the conflicts of creative evolution. But I greet Dr. Schiller's main decision with great satisfaction; unlike the rival "Absolutes" the new Power seems adequate. Nature, with all its wealth and variety, order and disorder; furtherings and thwartings of purpose, features fair and foul, "rational" and "sub-rational," may be discussed as an episode distantly akin—"si parva licet componere magnis"—to imaginal creation in ourselves. And we ourselves, again, with our sane concepts and judgments, dreams, errors, follies, hopes and fears, and the indefinite other detail of our affective lives are, like all the other subordinate sentients we wot of, so many eddies in the conscious life of a particular world-system whence, in the slow process of the suns, a new Finite God, born in part of us and our long martyrdom, is to emerge; an Osiris clad in glory after his baleful struggle with Set. And, again, the particular world-system and its conscious overlord, the evolving Finite God, what are even they but spindrift on the ocean of the infinite: of the Cosmic Imagining whose *con*sciousness is the *continuity* of a spiritual universe? Dr. Schiller does not allow that philosophy requires belief in an all-grasping world-principle. But I gather from his comment that, if he thought that such a principle was required, he would incline to turn towards the one which is interesting us now. The inquirer, who takes this initial step, will go very far.

Imagining on the human level covers not merely the conserving and creating of relatively concrete images, *e.g.*, of tables and coats, but the creation of gaunt concepts such as 'energy' or 'negativity' and the framing of hypotheses whose limits, as Mill himself incidentally contends, are the limits of imagining. Mr. H. W. B. Joseph mentions the "logician's imagination" and Mr. Bertrand Russell in *Our Knowledge of the External World* insists that the "logical imagination"—or shall we term it imagining which creates in the spheres of logic and mathematics?—must be developed. Shakespeare imagines when he creates Hamlet's and Falstaff's characters and so does the worker in non-Euclidean geometry or the "physics of imperceptibles". Hegel, again, is imagining when he frames the hypothesis of the logical IDEA or "Reason" and so too are Büchner and Moleschott, the materialists, when they suppose that the gaunt conceptual inventions "Matter" and "Force" are the World-Ground. The founders of popular religions imagine, very often remoulding the world fantastically to suit their hopes and fears. Dickens and Thackeray are imagining when they describe the emotional ordeals of men who never lived. All social progress is the gift of imagining. It is clear that a psychical activity much wider than mere image-awaring is in view. Human reasonings themselves, as my next work will endeavour to show, are forms of this conservative and creative activity. The "paradox" of the syllogism will, perhaps, trouble us no more when the Imaginal Hypothesis has invaded "psychologic". But the complications of world-imagining with private imagining are formidable and not to be more than suggested in this brief paper.

Like rival hypotheses about the World-Ground, the concept of the Cosmic Imagining is itself an imaginal creation. It is true if the conceptual scheme created serves, sufficiently well for my purpose, as a substitute-fact for the Universe. In other words my private *imagining* in this matter is true if it resembles, at however remote a distance, the general character of Cosmic *Imagining*. Similarly my concept of the Nebular Hypothesis or of the Geological Ages is true if my private imagining corresponds, sufficiently well to serve my interests, "theoretic" or other, with what has happened, independently of my inferences about it, in the imaginal structure of Nature, itself an aspect only of a particular world-system, itself an episode. Time-succession, Space and the "secondary" qualities having a standing in reality, whether present to our sentiency or not, no grave difficulties will be found to invest the "correspondence".

The first marked advantage, then, of the Imaginal Hypothesis lies in this. It does not have to suppose a cosmic 'essence' or 'activity' of fundamentally another character than the imagining which we know directly by acquaintance- Its object (for which the philosopher's conceptual world. scheme is a substitute-fact) is *consubstantial with what represents it*. This is well, since we are not able to grasp the infinite Universe, "about" which we think, in the immediacy of direct intuition. Not confronting the Infinite Imagining, we have to think it through a makeshift which, however, may possess not only a pragmatic "value" but also a considerable leaven of truth. Meanwhile we have the consolation that at one tiny point at least we are in direct touch with this World-Ground itself.

The second and, it may be, the decisive advantage is the "all-embracing" character noted by Dr. Schiller. Cosmic Imagining can hold or create all manner of variety of being —even "potential" worlds indefinitely numerous, even the 'contingency' of the time-process much of which, treated as meaningless and quite unassimilable by his system, so annoyed Hegel, even the abominations of life which prompted the revolt of Gautama Buddha and Schopenhauer, even the "alogical" (for which Von Hartmann provided a tyrannical autonomous Will warping the "logical" in disastrous ways!) Imagining can comprise also artistic creation, on the cosmic as on the petty human scale, but it is not clear on the other hand how Hegel's logical IDEA could extrude symphonies, colour miracles and poems. "Applied logic" must not be asked for too much. It is to be feared that "Reason," as Dr. Bosanquet's "nisus to unity," would prove equally sterile.

Imagining, indeed, is the *overlapping* psychical activity, in which all manner of truth-objects can arise and vanish as waves come and go on a sea. Its "elasticity and tolerance" are adequate to every call—adequate also, perhaps, when the final destruction of sheer evil is concerned, is its intolerance.[1] All that fouls the past and present is not to be conserved.

A third interesting point, not mentioned in my book, deserves notice here. It has been urged that the World-Ground resembles private imagining, conservative and creative, more nearly than it does other aspects of our experience. Note now that this private imagining *can* be concerned solely with itself. In private conceptual thought, on the other hand, we have process in which there is reference to reality *other than* the process of the thinking. Now the Cosmic Imagining resembles our most private imagining in this basic regard. It does not refer to *another* reality. It is self-sufficient and by hypothesis there is no other reality beyond it. Its object is no other than the content which fills it. Were it of the character of conceptual or 'rational' thought ordinarily so-called, it would be reaching forward eternally to another contrasted with itself.

Metaphysics is an attempt, made wittingly *or unwittingly*, to grasp the general character of Cosmic Imagining as seen darkly through a conceptual substitute-system. Its final aim is therefore conservative, though it attains this by way of creative experimental hypothesis. It contrasts thus with the dominantly creative ambition of Art.

"The waves of turmoil," writes Rabindranath Tagore, "are on the surface, and the sea of tranquillity is fathomless": we are urging similarly that the Cosmic Imagining is alike creative and conservative. Time-succession has baffled many thinkers who, like Prof. A. E. Taylor, balk at "the perhaps insoluble problem why succession in time should be a feature of experience".[1] It need dismay them no longer. It is impossible, perhaps, to account for the show of succession, even when condemned as 'false appearance,' within an accomplished Universe of "Reason" or like vaguely conceived Ground. But we may counter by urging that an eternally *fixed* Imagining were absurd and suggest that the changing side of this Imagining is just "creative evolution" itself. Cosmic Imagining, in short, being ultimately real, its mode of self-activity is equally real as well. Time-succession is the form of Creation. The presence of an imaginal dynamic in Nature and History, a dynamic already half-visible in those "conservations" and "transformations" which bulk so large in science, is to be suspected. Verified and substituted for Hegel's "universal power," Dialectic, it would prove of commanding importance.[2] This dynamic, again, in the case of any one particular World-System, seems to *begin*, as the plain man indeed, when discussing evolution, has always held. A Roycean beginningless and endless succession, a "well-ordered infinite series" present altogether to the Absolute, must not be asserted of this or that special world-romance or episode.

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[1] *World as Imagination*, pp. 252-254 and 270.

The Cosmic Imagining, even if we disregard creative episodes, has a content which is surely not 'timeless' but endures. And alleged "eternal connexions of content" can refer only to aspects of this enduring content. There are eternal truths about the enduring character of imagining; there are minor truths such that, having asserted x, we cannot refuse to assert y, because x and y are co-implicated features of total complexes, but who could assert that such complexes themselves must always endure? We may find the task of discriminating alleged "eternal" truths from merely very enduring *conservative connexions* beyond our powers. Who is to be sure that cosmic imagining comprises "necessarily" stable reality in any quarter?

In our own world of change there is an "order and connexion" on which great stress has been laid. It has even been argued that all inference from experience rests on belief in eternal connexions—as if, forsooth, we required complete "necessity" behind our inferences and could not, as the climber in fact does when making inferences about couloirs and routes, take a certain risk! Nevertheless Mr. Joseph, who is among upholders of this view, admits that "the first principles of science rest for the most part on no better foundation than this, that no others have been suggested which explain the facts equally well."[1] And they serve us on the whole as faithfully as we require them to do.

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[1] *Elements of Metaphysics*, p. 164.

[2] *World as Imagination*, pp. 342-376, and 467-473.

But even when we hit upon the truth, is it not safer as a rule to discuss *conservative connexions* of indefinitely enduring kinds than "eternal connexions," about which we are not in a position to write confidently? "What is the value of an eternal connexion save as a guarantee of particular judgments (applications) and a guide to the prediction of happenings? The scientific law or universal is no doubt more valuable than a particular observation because it can lead to an indefinite number of such observations. But for all that scientific generalisations are constructed on a basis of particular observations, and must ultimately show themselves relevant to the course of events. If they fail to do this they become unmeaning, and, sooner or later, we balk at calling them untrue."[2] In a world-order in large part experimental, one from much of which changing reality escapes, there must arise many conservative connexions which are moribund and fade eventually into the void. The imagining that creates can also, at need, and in the attaining of perfect reality, destroy.

Cosmic Imagining comprises, then, conservative connexions, some of which endure indefinitely and some of which may have a brief career. Many of these stable connexions subserving wide purposes can be called, if you like the term, 'rational'. But not all such connexions can be labelled in this way; thus 'laws' or 'habits' of Nature may be exemplified in situations of futility and sheer evil. Hegel himself has to regard portions of Nature as without meaning.

Only a few features of the Imaginal Hypothesis can be noticed now. But I ought, perhaps, to indicate its relation to mysticism. It purports to supply the intellectual foundation for a mysticism that starts, as Dr. McTaggart would say, "from the understanding". Cosmic Imagining has no place, save in finite sentients, for the substitute-facts known as concepts and does not generalise or 'deduce' syllogistically or extra-syllogistically, but enjoys the higher immediacy of feeling in which thought and thought-about, idea and reality, coincide.[3] When the mystic longs for a direct world-grasp, for *com*prehension in its complete form as rich and satisfying as a fully felt complex of colour or sound, it is likely that he has in view a concrete cosmic imagining—is dreaming of the goal in which thinking "about" has closed with, and become quenched in, its "other". Blake's notion of human imagination "expanding" within the imagination of God floods the usually vague ideal of mystics with light. Mystics have the great virtue of making us discontented with bare intellectual achievement. But let us not overlook that "besetting sin" of the *mere* mystic which has been pointed out by Prof. A. E. Taylor. The mystic is apt to revert to "the lower form of immediacy upon which intellectual reflexion has not done its work, instead of pressing on to the higher in which the effect of that work is preserved, though its form is transcended".[1] He has done little, so far, in the way of solving the time-honoured problems of philosophy. And in his poorer types he evades the pain of thinking only to slide back towards the mentality of the cod. The ordinary mystic in truth has not "expanded" sufficiently within the Cosmic Imagining to be able to discern the deeper truths that we require. But this is not to say that the far-off goal of his quest is not all that enthusiasm declares it to be: a reality of indefinitely rich content, at once cosmic emotion, knowing, and being, to be grasped intuitively in direct feeling beside which even the most complete of our makeshift rational systems would seem absurd.

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[1] *Introduction to Logic*, p. 468.

[2] Dr. Schiller, "The Import of Propositions": A Symposium. *Proceedings of the Aristotelian Society*, 1914-15.

[3] In *World as Imagination*, p. 142, occurs a passage: "If I could aware the 'State' in the fulness of immediate presence, with all its complicated human activities experienced concretely together, I should not need a

I turn to consider some criticisms of Dr. Schiller's, ignoring, perforce, in so doing the many views which I share with that distinguished thinker. And first as to his suggestion that metaphysics is poetry. Now Metaphysics progresses by way of a succession of tentative creative hypotheses, but its final effect surely is to provide some conservative statement of the character of reality *as it is*. Not that to be poetry is to be necessarily untrue; every work of the Cosmic Imagining is itself, whatever its subsidiary features, a poem. A world-episode might be likened to an epic, the creative IDEA to an artist. In this connexion it is to be noted that Dr. Schiller, besides being a pragmatist, is also a poet; *Riddles of the Sphinx* marking brilliant experimental work in monadology. And I take it that his metaphysics, which, of course,

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concept (usually a very abstract makeshift) 'about' it, etc." Dr. Bosanquet in his *Hibbert Journal* notice has criticised this as if I meant to refer to a "lower immediacy" of unanalysed feeling. He has overlooked the fact that there is a "higher immediacy" compatible with perfect discrimination of every aspect of the content awared.

[1] *Elements of Metaphysics*, p. 153.

he will class "ruthlessly" with poetry, is *also* an adventure in the quest of truth.

Dr. Schiller mentions a difficulty touching the concept of an "impersonal" imagination. But I do not suppose Cosmic Imagining to be sub-, but superpersonal. The World-Ground is conceived by me explicitly as *con*scious; this *con*sciousness being the *con*-tinuity of the contents of a psychical Universe. To be conscious on this level transcends the way in which a single finite sentient, with its intermittent 'self'-content contrasting with a 'not-self,' is conscious. The cosmic *con*sciousness which has all finite sentients and all existent contents present to It, cannot be called 'personal' to any profit. Indeed if we call It 'personal,' we merely describe It as a defective and fragmentary 'person' like one of ourselves and that way lies trouble. The truly important point for metaphysics is that we should allow that the World-Ground is conscious and that It enjoys also purposive affective being.[1] Those religionists, again, who desire to worship a reality more closely resembling themselves are not sent empty away. There remains the God (and Gods) of their special world-system; the Overlord in Whom this system is conscious. What object of devotion could be more utterly vital to them than such a God?

Dr. Schiller avers that I condemn the Ontological Argument but have found it useful, nevertheless, in places. But this is a misapprehension of my procedure. I have nowhere to my knowledge argued from the mere *concept* to the reality, independent of my conceiving it, of a cosmic consciousness. I have argued from the *intuition* of conscious continuity within my actual experience to a universal continuity of the same nature. And this continuity, I contend, treated as an hypothesis seems to be confirmed by the experience that all things "in one another's being mingle," nay by the mere fact that we can be aware of a related plurality at all. This might be cited as an instance of the method of exploiting alleged intuitions so as to discover at leisure whether they are of any worth.

Dr. Schiller himself has experimented with the hypothesis of monads and, in reply to the question as to how monads get related, suggests that, given the primeval monads, there is given also the possibility of their coming into relations. When such relations are established, the monads, under the constraining influence of a God-monad, begin a world-process. Novelties do occur, as many of us admit, so why should we not allow for such a happening as this? But, in the first place, we have no empirical evidence for the belief that there exist self-sufficient monads, unrelated or related. What are called "monads" can be discussed much more fruitfully as centres of psychical activity whose contents belong not only to them but to the wider territory of the World-Ground. Until there is a case made out for belief in genuinely pluralistic monads, we need not concern ourselves with the manner in which existents of the kind are related. First establish the reality of the monads and we will take thought about the riddle involved in their being related. Note, however, that the "novelty" of their being related would be very different from the novelties which figure in the epic of creation viewed as process in the Cosmic Imagining. Novelties within such imagining, which is at once one and many, may be conceived readily enough, for like events seem to occur momentarily within our own minor lives. But a novelty, which consisted in the conversion of a monads' "multiverse" into a universe, would be a fact happening without adequate conditions. For the primeval monads, since they are unrelated by hypothesis, are not in cognitive relations, are unaware of one another. They have no common "intelligible space," in which to meet; and there is no conscious power beyond themselves which could *imagine* a mode of their meeting. And, even if they could meet, this miracle, which had happened so inexplicably, could also, I presume, cease inexplicably and leave 'not a rack' behind. If, however, you admit the reality of a World-Ground which includes the "monads," you may be driven to consider anon whether this Ground is not the Cosmic Imagining after all with the alleged "monads" as so many centres of experience within it. For imagining is just such a principle as believers in novelty require.

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[1] *Cf. World as Imagination*, pp. 224-233, on Cosmic Emotion.

I have dealt here only with a few aspects of the Imaginal Hypothesis, which have evoked comment. The experiment has been dealt with in more detail elsewhere.

III.—ON CERTAIN IDEALISTIC ARGUMENTS.

By Harold P. Cooke.

1. *Matter without mind is unthinkable—matter exists only in mind.* Who, that has studied in the metaphysical schools, has not sooner or later been confronted by these venerable dogmas in the guise of deductions, conclusions, or inferences? I shall not in the first instance with any minuteness inquire what precise meaning can be attached to these statements, but I propose to examine in outline a type of argument, in which they are commonly exhibited as inferences.

The generality of men (if they have an opinion at all in the matter) will be found to hold that what in everyday life are called "things" have an existence apart from the mind or independently of their being perceived. The plant in my study, they will tell you, "is there," when no one is there to perceive it, still green and cold, still odorous, large and drooping. It exists in that sense "in itself" or "apart from the mind". Such, indeed, is the common opinion.

2. Now the argument, with which I am dealing, has combated this position as follows: After an inquiry into the qualities of matter, both secondary and primary, directed to exhibit their dependence on the mind (in a manner I here pass over), the thinkers, of whom I am speaking, infer that "things" exist only in mind. But what is this mind or consciousness, as the phrase is, wherein the world exists? Evidently it can be no other than the mind of the critic himself, for it is that which he is criticising.[1] The world, therefore, exists in my consciousness, whence (as I suppose) it is inferred by analogy to exist equally in your consciousness and so on with other minds in their turn. And so it follows that the world at this moment exists in the consciousness of those who apprehend it here and now. But the men of science tell us that the universe existed, when no sentient being whatsoever, to the best of our knowledge, was to be found anywhere upon this (or, for that matter, any other) planet. If, then, this scientific doctrine

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[1] Berkeley, for instance, speaks throughout of himself.

commends itself to us (as to the majority of cultured mankind),[1] the world in what I may perhaps be allowed to call those presentient days, must, we are told, have existed in some or other mind, which was, of course, none other than the Divine. Such, as I understand, is, in substance and outline at least, one type of argument for Idealism and the existence of a Divine Mind. But will it bear examination?

3. The world exists, says the Idealistic doctrine, in my consciousness, and by analogical inference in yours. Now I hardly see my way to accept this as a precise statement. Setting out, be it remembered, from my own experience, I can affirm nothing more than this, that whatsoever part of the one world or universe, as in an unphilosophic mood I should regard it, that is to say, whatsoever things are at any moment perceived and present to my consciousness, are at that moment for my mind and in my consciousness. And so, again, with your mind. In other words, what is at any time presented to any mind is at that time "in that mind" or "consciousness". I will assume that up to this point the argument marches well, as the Frenchmen say. Now, there may be a plant in my room, when I am in my room and perceive it. But suppose that I am "outside that room" and the plant is no longer perceived by any sentient being, though, of course, I may perceive it, if I return. Does it still exist? The answer, as I apprehend, is in the affirmative; or I cannot see a reason for saying that the world was really and in truth existent in that old time, in what I call presentient days. But surely this is a great *crux*, for consider what is thereby asserted. The plant I am speaking of is declared even now undoubtedly and actually to exist, *though at this moment it is not, so far as I know, in any consciousness at all, whether mine or another's.* And thus it seems that *esse* is no longer *percipi*. But, if this is so, I have no reason for asserting that it does now exist in any consciousness, unless I first lay it down that all things whatsoever exist in some consciousness or mind. But this is what I am, of course, endeavouring to prove. Nor does this postulate, indeed, tell us anything of the kind or quality of that consciousness or mind, whether it is Divine or otherwise, nor whether there are many or one only.

4. But, it may be objected, the judgment that all things whatsoever exist for a mind, that is, in some consciousness, was just the outcome of my criticism of my own experience. To this I answer: Not so. My criticism of my experience,

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[1] I must not be understood as endorsing this doctrine.

yours of your experience and so on, told us nothing (that I can see) of what was *not* perceived by us, and was, in fact, assumed outside the consciousness of *all* sentient beings. No such universal statement could be based upon criticisms, be they ever so numerous, by various minds of their own "experiences". For in the one case we are dealing with objects within the minds of sentient beings, in the other with objects without them. In the one case we are aware of their qualities, and upon them we rest our contentions; in the other the objects are unknown.

5. Further, it may possibly be said that I acknowledge the existence of the plant when I am out of the room, forasmuch as, though it is no longer perceived, yet is it thought of by me. And undoubtedly I may think of it now, in the sense that I may picture it to the mind. But a living plant does not therefore exist any more than centaurs and chimæras. There may be some, who, adapting the language of Berkeley, would contend that it has "entered my head and become an idea". But this idea of it, whether mental picture or notion (if notion there be as apart from the word), is of the plant as it is "in the mind," not of a plant that is "without or outside it": nor is it the same even then with the presented reality, albeit our mental pictures or notions (if notions there be) are ever associated with or referred to the presented reality. Again, I am aware that there may have been an interval between my perception of the fire and my recurring to it in thought or imagination; whether existent now or not, was it existent then? If so, we are brought to the quaint position that whatsoever *may* be perceived or thought of by me must exist, as, for instance, old things, that have perished. We conclude, I think, that the addition of the alternative "thought of" to the term "perceived" would go no way to the solution of our problem.

6. Thus it seems to me that Berkeley was in the right, when he replied to that objection against the doctrine he was advancing that it was at issue with "several sound truths of Philosophy" (namely, Natural Philosophy or Science) "and Mathematics," as, for instance, the motion of the earth, which is, he says, "grounded on the clearest and most convincing reasons". He will be told that there can be no such thing in his system. It is never perceived by sense; therefore it is non-existent. He answers that the question whether the earth moves or no amounts to this: if we were placed in a certain position at such and such a distance from both the sun and the earth, we should perceive it to move (*Principles*, § 58). And this—I venture to suggest—is the sole answer

for those who accept, broadly speaking, the Idealist argument I am considering (for it is plainly not to the point to say it is "thought of" in whatever sense); though elsewhere Berkeley is willing that we should suppose things unperceived by us at all or at any given moment to exist in God's mind. And so our fine Idealistic argument has "blown itself away like a fairy tale".

7. Especially should the reader take note that the Idealist doctrine has allowed the existence of some things at some times altogether outside the consciousness or minds of sentient (human or animal) beings. At the moment when I left my room, my plant ceased to be what Berkeley called a "sensible thing" or "thing immediately perceived by sense". It became something that might again be perceived as a plant—in fact, if I may so put it, in accordance with the Idealistic argument, an object for the Divine Mind. And thus the standpoint of my own personal experience was given up, in spite of its being the basis of my criticism. But, I ask, when it is once more in my mind, in my consciousness, is it then also outside my mind? Or, again, is it in my mind and in the Divine Mind? Says Berkeley in the *Consequences of the Principles*, § 90: "Sensible objects may likewise be said to be 'without the mind' in another sense, namely, when they exist in some other mind; thus, when I shut my eyes, the things I saw may still exist, but it must be in another mind". Indeed, this see-saw of existence, now in, now out of my mind, appears somewhat bewildering. For, if there be one plant only or one object that we may at some moment perceive as a plant, then, if it be perceived by two individuals or three or any number at the same time, it is at once in the minds of two or three or whatever number it may be. But, if there be two such objects or as many as there are percipients, what becomes of that single old world of presentient days, for that too is an inference from individual experience? Were there many such worlds?

8. What, then, is very briefly the tenor of the considerations I have been adducing? The world as existing in and for mind is taken as the result of the Idealistic criticism of experience. But whose mind? Surely that of the particular investigator. Therefore, we say the world exists in my mind. But Science tells of a world existing before sentient beings; and this, according to Idealism, must have existed in a mind, which could have been none other than the Divine Mind. Our exposition then proceeds a further step: "the world exists in my mind" can signify only that what is at any time presented to me exists in my mind at that

time. This being so, we go on to ask whether the plant that was in my room, when I was there, still exists in certain circumstances and if it is no longer perceived by any sentient being. The answer of the argument must surely be "Yes," and thence the *crux*, "*Esse* is no longer *percipi*," unless I first assume that all things whatsoever exist in some consciousness; and the objection that this was the outcome of my criticism of my own experience was rightly negatived. And then I go back for a moment and show that, when I left my room, I gave up the standpoint of my personal experience, and I point to the difficulties that thus present themselves, if indeed I can predicate anything of the plant whatever.

9. Our Idealistic argument is now seen to be far from immaculate. It conceals the assumptions, upon which it proceeds. It assumes the universal proposition or law (so to speak) that whatsoever exists exists in some consciousness or mind, which is also the conclusion to which it tends. It does not tell us exactly what we are to understand by these things outside the mind, nor does it fairly face the difficulties thus involved. Once more: it introduces a Divine Mind by a leap in the argument and is in short devoid of philosophic cogency. So much, then, upon this Idealism considered as proceeding to a definite conclusion.

10. In the above criticism I passed over the first stage in the argument concerning the primary and secondary qualities. Let us return to it here for a moment. Now, should you, as an Idealistic philosopher, desire to convince the plain man or the man of science, who has been so happy as to escape a philosophic training, that what is called materialism or the existence of matter in itself or apart from the mind is an unsound doctrine and bring him to admit your contention, you may point (let us say) to yonder plant and question him whether, in his opinion, it is green *per se* or no. If he answer in the negative, well and good: if not, you suggest to him (introducing, perhaps, what are called the phenomena of colour-blindness) that, were there no sentient being endowed with the organs of sight to perceive it, no meaning could be assigned to this proposition that "the plant is green". And, if he should offer instead some scientific "explanation," you will answer that his rays of light or whatever they may be are no more the sensation of green than the sensation of heat is a mode of motion.[1] Thus, when you have run over in like

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[1] Again, you will say, is it cold, when there is no one present to touch it? Or sweet, when no one is by to smell it? How often, for instance, it happens that what is cold to one man is not cold to another, or warm to one hand and cold to another!

manner the other secondary qualities (of taste and hearing), I am assuming that he will admit your contention (if he understand it) about their supposed independence, in order to retire into the fortress of the primary qualities, thinking to have you there and maintaining that figure, position, bulk, motion, impenetrability, indivisibility, etc., are anyhow "really in the things themselves". But, you say, motion, extension and the like imply space: a moving extended body must move in space and nowhere else. And what is space as apart from a mind and organs of vision or spatial relations that go unapprehended? If he still believe that "things," as apart from their secondary qualities, are independent of any mind, you will ask him to be so good as to withhold his knowledge of them. You will conclude, therefore, upon the Idealistic theory, that all the qualities of objects are within the circle of the mind.

But what, more precisely, has your contention amounted to? Simply to this, in effect: that you cannot *imagine* in the sphere of matter what is not an experience of the mind or, in other words, you cannot form a mental picture of what is *ex hypothesi* unapprehended. *Nor, though you may talk of it as existing, can you explain what is meant by the term "existence" in that context.*

11. If, on the other hand, starting from a subject and a presented objective (in the language of some modern psychologists) and ignoring "the organs of sense," you regard that objective as immediately presented as an unbroken whole to the mind and argue therefrom that matter without mind is unthinkable, you are nevertheless far from escaping the difficulties, with which we have dealt.

12. And here a brief reference may be made to the classic argument of Bishop Berkeley, who is generally allowed to be the Father of all modern Idealism. It is a common opinion that Berkeley's inquiries into the nature of matter and subsequent erection of an Idealistic system of philosophy are largely based upon the familiar division, first enunciated in its completeness by John Locke, into primary and secondary qualities of objects. What, then, is the Berkeleian philosophy? Take the following sentences (*Rationale of the Principles*, § 10) as a general summary: "For my own part, I see evidently that it is not in my power to frame an idea of a body extended and moving, but I must withal give it some colour or other sensible quality which is acknowledged to exist only in the mind. In short, extension, figure and motion, abstracted from all other qualities, are inconceivable. Where therefore the other sensible qualities are there must

these be also, to wit, in the mind and nowhere else." That is, all qualities of matter, "whatever objects they compose" (§ 3), "cannot exist otherwise than in a mind perceiving them". "Existence in the mind" equals "their being perceived by the understanding" (§§ 3, 4) or "their being perceived or known" (§ 6). "Their being known" does not, I think, introduce any independent term but is a mere synonym for "their being perceived". It is "the being perceived," then, that constitutes "existence in the mind and nowhere else". Now, there is a certain ambiguity in this language; for, one asks, would Berkeley identify "perception" with *αἴσθησις* in the narrower sense or "sense-perception" or "external perception," as Locke has it;[1] for this we should, in fact, be led to suppose, if his philosophy be essentially (as is the common opinion) a development of the *Essay* of Locke? Let us examine and compare two such passages as the above-quoted passage from § 10 and a second from § 3. In the former the primary qualities appear to be set upon the same footing with secondary; and the secondary were "acknowledged to exist only in the mind"—that is to say, acknowledged in the philosophy of John Locke. "The table I write on," says Berkeley in the latter passage, "I say exists, that is, I see and feel it; and if I were out of my study I should say it existed—meaning thereby that if I was in my study I might perceive it, or that some other spirit does actually perceive it. There was an odour, that is, it was smelt; there was a sound, that is, it was heard; a colour or figure and it was perceived by sight or touch. That is all that I can understand by these and the like expressions." From which passage or certain phrases in it we infer that Berkeley is, in truth, speaking from the standpoint of "external perception". But, indeed, I conceive that Berkeley came short of any well-adapted theory, as I hope presently to show. For he no more enunciates his conclusions than argues up to them. "In truth," he says, "the object and the sensation are the same thing and cannot therefore be abstracted from each other" (§ 5). If we examine a little the lines of thought, upon which Berkeley was working, we shall find him possessed with the impossibility of assigning to "material" objects an existence independently of a mind. In §§ 10 and 11 we have already had occasion to note that there are two distinct standpoints, from which the Idealist argument may be started upon its career. The philosopher may begin with that view of himself, at once scientific and popular, as a being endowed with many organs of sense and through them attaining to a knowledge of objects. Or, again, he may begin with himself as immediately in contact with objects or his sensible world (in the language of psychologists, "his presentational continuum") and deny the intervention of any third element, such as would be the organs of sense. Fundamentally, it appears to me that Berkeley's great argument can be read in all essentials from the latter of these standpoints. But anyone, who should carefully consider his position in the history of philosophy, will acknowledge that his doctrine depends more upon Locke's representative perception, though the latter is so far incidental that Berkeleianism would scarce be affected by its absence.

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[1] *Cf. e.g.*, "The immediate object of the mind in external perception is its own ideas".

13. Consider a moment the Lockian theory. Experience has four distinct elements included in it, the mind, the senses, material substances, and ideas. Material substances are outside the mind, but through the organs of sense impress certain copies upon the mind, which, however, are modifications of the real things, for indeed in passing through the organs of sense they acquire colour, taste, smell, and so on—the secondary qualities. Now the Berkeleian revision of Locke has very briefly abolished those external material objects, which had till then been inherited by the philosophic schools from Descartes, who in turn had inherited them from Science. But *historically*, I wish to observe, first of all, that Berkeley has left us the organs of sense. Therefore they, too, must consistently be sensations, whereby we have other sensations! They are, as it were, a channel for those other sensations; and, moreover, they must always be present in the mind (as "subjective affections"), whensoever I apprehend other "objects of perception". Either, then, my bodily organs are *permanent* sensations in the mind, as being necessary ever to the perception of sensible objects, which is not the case—neither, indeed, are there permanent sensations. Or we must presuppose the body, and thus are brought once more essentially to the Lockian position of (*a*) the mind, (*b*) the body immediately known or perceived, and (*c*) sensations impressed through the body upon the mind, save that these sensations are in Berkeley not representative of objects but identical with those objects themselves. And the cause of their being impressed is apparently the Divine Will. Neither of these alternatives seems a possible one to hold. But I cannot suppose, nevertheless, upon the Berkeleian hypothesis, that my organs of sense are non-existent. For, inasmuch as I may perceive or know my hands (though not, it

may be, the organs of sight), they must be sensations, "for the object and the sensation are one," or *esse*, it seems, is no longer *percipi*.

14. We have now considered in certain of its aspects a famous type of Idealistic argument. Whether we start with that conception of man as a being endowed with certain organs of sense or regard him as immediately in contact with his sensible surroundings (in the ordinary language), alike we fail to arrive at the conclusion that matter without mind is unthinkable or exists only in or for mind. In the second place, assuming that man is a being with organs of sense, we are at the outset of our argument entangled in additional difficulties.

I have taken the Idealistic argument with all its assumptions upon its own grounds. But I must not be understood as inferring that it cannot be substantially stated in such manner as to win our acceptance. Not as an *inference*, however, but simply and merely as a definition of terms! Whosoever would attain to a knowledge of what are called "matter" and "mind" must, first of all, ask himself what he means and intends by "existence" and "experience".

IV.—THE IMPLICATIONS OF RECOGNITION.

By Beatrice Edgell.

The intrusion of psychological criticism in what may look like an epistemological problem may seem to require justification or apology. Some degree of the former is to be found in precedent.

Prof. Baillie in his article "On the Nature of Memory-Knowledge"[1] was dealing with a problem which was avowedly logical, yet his solution was saturated with psychological truths.

Prof. Laird in his article "Recollection, Association and Memory"[2] was professedly striving to bring the assumptions of New Realism into line with psychological facts. "The aim . . . is not . . . to show that the facts of memory can be tortured into consistency with these assumptions, but contrariwise that the facts require them." With the success or failure of this enterprise I am not here concerned but merely with the enterprise itself. Both articles bring out the importance of psychological truth for epistemology.

The problems of psychology and the problems of epistemology are different, but the best interests of philosophy are not served by the entrenchment of the province of each behind a strip of no man's land. Not only may the debatable ground afford common problems, but the assumptions of the one may stretch so far as to undermine the constructions of the other, and for this reason, if for no better, require exploration.

This was the belief which made me question Prof. Alexander's account of the psychology of memory[3] and the same belief must serve as my apology now.

Some of the difficulties brought out by Mr. Moore in his contribution to the symposium, "Are the Materials of Sense Affections of the Mind?"[4] have led me to desire to re-examine the implications of recognition with special reference to knowledge by acquaintance, the kind of knowledge of which sense-knowledge is said to be typical.

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[1] Mind, July, 1917. [2] *Ibid.*, October, 1917.

[3] *Proceedings of the Aristotelian Society*, 1911-12.

[4] *Ibid.*, 1916-17.

In an earlier symposium, "The Implications of Recognition,"[1] I had tried to set forth the difficulties I found in understanding how anyone who held Mr. Russell's views as to (*a*) the nature of knowledge by acquaintance, (*b*) the nature of sense-data, could account for recognition. Recognition seemed to me to imply facts which were irreconcilable with both these views.

Mr. Moore in that earlier symposium did me the honour of giving what he termed a correct answer to the question: "What kind of event are we asserting to be happening when we say, with regard to a present sense-datum, 'I know that I have sensed something like this before?' . . . The *correct* answer to our question I take to be this. This kind of recognition consists in our knowing, with regard to the present sense-datum, and with regard to the *relation* 'likeness,' just this: That there was a sense-datum, of which it is true, both that it was sensed by me before, and that it had the relation of likeness to *this* sense-datum. . . . But . . . it does *not* involve that, at the moment when it occurs, we should be *acquainted* with any past sense-datum whatever, which was, in fact, like our present sense-datum. We must have been formerly acquainted with at least one sense-datum which was like our present sense-datum; we *may* have been acquainted with several that were so. But, at the moment when our act of knowledge occurs, we need not be acquainted with any such sense-datum; and (I should say) *never* are so. . . . We need not even know any such sense-datum by description, in Mr. Russell's sense. All that is involved is that we *are* knowing with regard to the property 'sensed by me before *and* like *this* sense-datum' that there was at least one sense-datum which possessed it."[2]

Mr. Moore asked why I thought Mr. Russell precluded from giving this answer.

I wish now to examine the implications of recognition as outlined in Mr. Moore's "correct" answer and to consider Mr. Russell's account of acquaintance in relation to them. I wish further to question the independence which Mr. Moore alleged between Mr. Russell's view of acquaintance and his view of the nature of sense-data.

Recognition is, of course, cognition, and it is, for Mr. Moore, "knowledge about". We know about the present sense-datum, about the relation of likeness. Retentiveness is implied. "We are knowing with regard to the property sensed by me before and like this sense-datum that there was at least one sense-datum which possessed it." On the very coarsest analysis all this implies much over and above retentiveness. It at least implies a distinction between the *quale* of some past sense-datum and its "thisness," otherwise we should not now be knowing this property "sensed by me before and like this sense-datum" when we are not knowing that sense-datum by acquaintance. There would seem further to be differentiation and assimilation of that *quale* with respect to the *quale* of the present sense-datum. It is apparently both differentiated from, and assimilated to the present *quale*.

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[1] *Proceedings of the Aristotelian Society*, 1915-16.

[2] *Ibid.*, p. 213.

Now does Mr. Russell's account of acquaintance with a sense-datum furnish a possible basis for recognition as described above?

Some may be tempted to ask, "Why should it?" Mr. Russell is not concerned with psychology. It is not his business to trace the development of cognition. This, I think, was the thought which underlay Mr. Bartlett's contention in the course of the earlier symposium: "Questions of history are often confused with questions of analysis. . . . And it is no valid criticism of the analysis to say it leaves us without an account of how the factors that it indicates have come to be what they are."[1] Perhaps not, but it is in place to ask whether the analysis given is adequate. Knowledge as described by the theory of knowledge must at least be psychologically possible. To me Mr. Russell's analysis of acquaintance seems wrong because from such cognition, once admitted into the scheme of cognitional development, advance becomes impossible.

But to turn to Mr. Russell's view of acquaintance! It is not very easy to obtain from his writings a self-consistent account, possibly because he explains it in different contexts. In the first place knowledge by acquaintance is sharply distinguished from knowledge about. "Acquaintance, which is what we derive from sense, does not, theoretically at least, imply even the smallest 'knowledge about,' it does not imply knowledge of any proposition concerning the object with which we are acquainted. It is a mistake to speak as if acquaintance had degrees: there is merely acquaintance and non-acquaintance.[2] Sense-data . . . are among the things with which we are acquainted; in fact they supply the most obvious and striking example of knowledge by acquaintance."[3]

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[1] *Proceedings of the Aristotelian Society*, 1915-16, p. 189.

[2] *Our Knowledge of the External World*, pp. 144, 145.

[3] *The Problems of Philosophy*, p. 75.

The fullest account of acquaintance is given in three articles, "On the Nature of Acquaintance". Mr. Russell is there making his case against neutral monism. "There is . . . at any given moment a certain assemblage of objects to which I could, if I chose, give proper names; these are the objects of my 'awareness,' the objects 'before my mind,' or the objects that are within my present experience."[1] Mr. Russell seeks to disclose by analysis the bond which unites this collection and distinguishes it from what is not experienced, though open to knowledge about. "The difference between being and not being one of the contents of my momentary experience, according to James, consists in experienced relations, chiefly causal, to other contents of my experience. It is here that I feel an insuperable difficulty. I cannot think that the difference between my seeing the patch of red, and the patch of red being there unseen, consists in the presence or absence of relations between the patch of red and other objects of the same kind. It seems to me possible to imagine a mind existing only for a fraction of a second, seeing the red, and ceasing to exist before it had any other experience."[2]

"Neutral monists have done a service to philosophy in pointing out that the same object may be experienced by two minds. . . . Thus when an object O is experienced by two different persons A and B, the experiencing of O by A is one fact, and the experiencing of O by B is another. The experiencing of O by A may be experienced by A, and the experiencing of O by B may be experienced by B, but neither can experience the other's experiencing. A can experience his experiencing of O without logically requiring any other experience; hence the fact that he experiences O cannot consist in a relation to other objects of experience, as neutral monism supposes. From these characteristics of experience, it seems an unavoidable inference that A's experiencing of O is different from O, and is in fact a complex of which A himself, or some simpler entity bound up with A, is a constituent as well as O. Hence experiencing must be a relation, in which one term is the object experienced, while the other term is that which experiences. . . . Now since we have decided that experience is constituted by a relation, it will be better to employ a less neutral word; we shall employ synonymously the two words "acquaintance" and "awareness."[3]

Acquaintance is thus a relation of which one term is that which experiences, but this does not involve any direct knowledge of that term. The datum when A experiences his experiencing of O, is, "something is acquainted with O". "The subject appears here, not in its individual capacity, but as an apparent variable." It is the referent for all the relations wherein "this" is object. But Mr. Russell holds that acquaintance with O does not necessarily involve acquaintance with this acquaintance. We are thus saved from a limitless involution.

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[1] *Monist*, 1914, p. 5.

[2] *Ibid.*, p. 172.

[3] *Ibid.*, pp. 437-438.

The following passage from the same article raises for me some doubt as to the distinction between knowledge by acquaintance and knowledge about. "When two objects O and O′ are given as parts of one experience, we perceive the fact 'something is acquainted with both O and O′'. Thus two instances of acquaintance can be given as having a common subject, even when the subject is not given. It is in this way, I think, that 'I' comes to be popularly intelligible."[1] Does acquaintance in the instance supposed involve knowledge of O and O′ as different objects? If so, why does not such knowledge constitute knowledge about O and O′? If it does not involve this much, why must there to introspection be two instances of acquaintance having a common subject? Why should there not be two instances of acquaintance having a different subject or a single instance of acquaintance with an undifferentiated object OO′?

A similar question as to the simplicity of the object in acquaintance is raised when we read that the relation arising in attention is different from that of mere acquaintance, and that "one point in which it differs is that a subject can only attend to one object, or at least a very small number, at a time".[2] Are we then to suppose that we can be acquainted with a multiplicity of objects *as a multiplicity?* This is a question which is suggested also by a criticism of Mr. Moore's, and I will refer to it again in that connexion.

From his account of acquaintance we may pass to Mr. Russell's account of the nature of sense-data. The account which I used in my symposium paper was that given in his article on "The Ultimate Constituents of Matter".

"When I see a flash of lightning, my seeing of it is mental, but what I see, although it is not quite the same as what anyone else sees at the same moment, and although it seems very unlike what the physicist would describe as a flash of lightning, is not mental. . . . What I mean could perhaps be made plainer by saying that if my body could remain in exactly the same state in which it is, although my mind had ceased to exist, precisely that object which I now see when I see the flash would exist although, of course, I should not see it, since my seeing is mental." [1]

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[1] *Monist*, 1914, p. 442.

[2] *Ibid.*, p. 445.

On the basis of this description of sense-datum, I then raised the following problem of cognition: "Suppose the constituent 'what I see' of all that occurred in the physical world to recur"—a possibility which Mr. Russell would seem to allow—". . . how could we interpret awareness of 'again,' 'had before,' on the supposed recurrence?" "There is a temptation to modify the sense-datum in virtue of the body concerned in the seeing, on the ground that the body is modified by the previous occurrence. But we have no more reason to assume that those events which constitute the body, at least so far as concerned in the incident, are different, than we have to assume that the physical event which we call the flash of lightning is different. We may suppose that they recur, and so leave theories as to brain tracts on one side." [2] What can the magic of repetition effect? One might perhaps be justified on indirect evidence in claiming that sometimes when there is repetition the recurrence of an event is for the individual as a first occurrence, there is no recognition. One may claim this, I think, without infringing on the doctrine of retention. But if we are to link up acquaintance with a sense-datum with Mr. Moore's "correct answer," we must look for the most that repetition can effect, not the least.

Can we solely on the ground of retentiveness say that the sense-datum becomes "familiar" with repetition? It seems to me that this latter is just what we cannot say. The utmost that we can infer from retentiveness is that with repetition the acquaintance with O may be facilitated. It may conceivably take place more quickly, more vigorously, but it will be acquaintance with O, and nothing more.

Mr. Russell in argument often has recourse to diagram, and possibly for this reason his account of acquaintance always calls up for me the image of two irregularly-shaped masses, labelled respectively "matter" and "mind," bumping into one another "in the intimate way of acquaintance" I see them repeat the process, but I can infer nothing from the ensuing bruises except increased intensity in the shock of the collision. Mind never "recognises" matter.

I tried in the earlier symposium to bring out my difficulty with regard to retentiveness and repetition by saying: "My seeing is different on the second occasion; this is where we must look for the influence of past experience. But no sooner have we said this than the artificiality of separation between act and sensum, by which the one is mental and the other physical, becomes apparent. If 'again,' 'had before' is the property of the act, how does it penetrate through to the sensum, for so penetrate it must if it is to become known?" Mr. Bartlett took me to task for this. "There is no reason whatever why we should maintain . . . that the property of 'again' must penetrate through to the sensum."[1] In a preceding paragraph Mr. Bartlett wrote: "We say, 'when a series of actions has been repeated once or twice its performance is facilitated'. May be the inner side of facilitation is what we call feeling of familiarity, and this is somewhere at the basis of the process that becomes definitely remembering and sometimes recognising."[2]

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[1] *Monist.*, 1915, p. 404.

[2] *Proceedings of Aristotelian Society*, 1915-16, p. 182.

I agree, but is not this just the point? Facilitation must have an inner side, and will not this inner side penetrate to the sensum, or fall within the "totum objectivum," to use Dr. Ward's phrase. If it does not, I fail to see how it will serve for remembering or for recognising. One might, of course, claim that it was introspection which was acquainted with the facilitation of experience, but this will either lead epistemologically to involution in the act of acquaintance, for which there is no limit, and which Mr. Russell himself has not entertained, or would postulate a completed analysis of the "totum objectivum" which would nullify the whole epistemological function assigned to acquaintance. The adoption of Prof. Royce's theory of a third fundamental cognitive process, interpretation, might save such a situation. When I recognise O as "familiar" or "had before" there would be neither mere acquaintance with the present object nor knowledge about this object, but the interpretation to my present self of O as a sign expressive of my past self. But this is a digression.

We said Mr. Moore's account of recognition involved knowledge of the likeness between the present sense-datum and the *quale* of the past sense-datum, though there need not be acquaintance with this past sense-datum. It need not apparently be in memory as an object of acquaintance. Forty-eight hours ago, say, I was acquainted with O. Now on the recurrence of certain events, I know O and I know the likeness of this O to something or other which is past.

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[1] *Proceedings of the Aristotelian Society,* 1915-16, p. 192.
[2] *Ibid.*, p. 191.

Accepting Mr. Moore's account of what happens through repetition: a change from acquaintance with a sense-datum into knowledge of a truth about a sense-datum, or perhaps on Mr. Russell's theory, into acquaintance with likeness,—can psychology entertain the change as a scientific problem, or must it be a piece of mysticism or possibly a metaphor with a meaning only in epistemology?

Mr. Moore certainly writes as though retentiveness would enable us to be aware of the likeness between a present "this" and the *quale* of a past this, although the particularity or the "thisness" of that past object of acquaintance is not revived. I think he is right as to the fact of such a development, but I fail to see how he could be so, if our original awareness were mere acquaintance as described. Could the distinction of *quale* and "thisness" have arisen at all when unanalysed "thisness" was the essence of acquaintance? Does retention analyse what as given was unanalysed? I find the same difficulty here as that which confronts me when I try to conceive the accomplishment of the programme outlined as follows by Mr. Russell: "When we first see a white patch we are acquainted in the first instance with the particular white patch; but by seeing many white patches, we easily learn to abstract the whiteness which they all have in common, and in learning to do this we are learning to be acquainted with whiteness."[1]

My trouble is to see how we could ever learn anything, however retentive we might be, from a repetition of acquaintance with sense-data as described by Mr. Russell. What latent possibilities does it offer for comparison or abstraction? Consider in this connexion the following passage:—

"It tends to be supposed that colours being immediate data, must appear different if they *are* different. But this does not follow. It is unconsciously assumed that, if A and B are immediate data, and A differs from B, then the fact that they differ must also be an immediate datum. It is difficult to say how this assumption arose, but I think it is connected with the confusion between 'acquaintance' and 'knowledge about'."[2] If this is so it should not be supposed that colours appear alike when they *are* alike; and it surely "does not follow" that on the repetition of the white patch we should necessarily be acquainted with the second as like the first, or that we should easily learn to abstract the common quality. As I understand Mr. Russell's acquaintance there would be momentary flashes of something—I hesitate to call it cognition—but each flash would be discrete, insulated. How awareness of likeness and difference could arise therefrom is to me a mystery. The object presented is simple or unrelated.

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[1] *Problems of Philosophy*, p. 159.

[2] *Our Knowledge of the External World*, p. 144.

Mr. Moore regarded me as committing two errors, in maintaining that the object in acquaintance is simple and that there is nothing to abstract. In the first place he asserts, "this is a mere mistake. According to Mr. Russell, if there were an acquaintance with the fact 'a is like b,' such an acquaintance *must* be complex, containing as constituents, at least, a, b, and the relation 'likeness' among others."[1] I do not know what is intended by a complex acquaintance. There may be acquaintance with a complex, but surely the complex is not known as a complex? If so, what is the distinction between "acquaintance" and "knowledge about"? If I know the tone which I hear is a complex of sounds, but do not separately acquaint myself with this and that overtone, is not such knowledge, knowledge about the tone in question?

Mr. Moore goes on to say, "It seems to me an important error to maintain that if a thing is simple, there can be nothing to abstract".[2] I am concerned with the simplicity of the object as known in acquaintance, not with the simplicity of an object regarded as a thing in the world of sense objects. It does seem to follow, if I postulate that a sense-datum is for me simple, *e.g.* orange, that I cannot abstract from it red and yellow. Bare acquaintance with orange gives no scope for differentiating or assimilating the orange from, or to, red and yellow.

But we do here, I think, reach the root difficulty of Mr. Russell's view of acquaintance: the impossibility of making headway with an object of cognition which is without necessary relations to previous experience. For this reason I should hold there never is a simple cognitive acquaintance with an object, but always knowledge about; that every object is *ipso facto* set in relations. The "this" of sense experience is at least in respect of its *quale* differentiated from, or assimilated to, the sense-data of past experience. Mr. Russell said it was possible to conceive of knowledge by acquaintance for a momentary mind. Nothing could, I think, show more clearly how inadequate his view is as an analysis of any act of knowledge. The object known by the experient is never divorced from past experience. Cognition cannot begin "ex abrupto".

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[1] *Proceedings of the Aristotelian Society*, 1915-16, p. 219.

[2] *Ibid.*, p. 219.

In the earlier symposium I tried to express this influence of past experience on cognition in two statements to which Mr. Moore took exception. I said: "It is my previous experience with '*b*' which changes a hypothetical simple '*a*' into '*a* like *b*'". "It is the '*a*' itself which is different from the sensum it might have been had there been no experience of '*b*'."

Mr. Moore thinks I have confused the nontautologous (and according to him false) proposition, "that every sense-datum which is recognised must be qualitatively different from anyone which is not," with the tautologous proposition "that every sense-datum which is recognised has some *property* which does not belong to any that is not".[1] I also spoke of sense-data as modified by past experience, and this expression he characterised as "astonishing". Ambiguity seems almost inevitable since I was trying to put my own view into language which belongs to Mr. Russell's theories.

With regard to the first statement, I should, of course, really hold that previous acquaintance, in Mr. Russell's sense of the term, could change nothing. If I had a momentary mind I could with a flash of acquaintance have "apprehended" (or whatever term one could use with the mildest cognitional flavour) "*a*," but since I have a history I apprehended, not "*a*," but "*a* like *b*". It can be written "*a*-like-*b*," if this makes the nature of the object clearer. If by a sensum were meant the physical quality of a thing, then I could understand how my second statement merits the epithet "astonishing". But, from my point of view, we never know any quality by sensation; we know a sense given something in relation to past experience. And still less can I assent to the doctrine of acquaintance as a form of cognition in order to understand how the sense-datum might be a physical quality or how it might be something outside the bourne of mental life. I cannot, for example, conceive of the past history of a man spliced on to the present moment of acquaintance in his dog and then say that in the presence of the stone-throwing postman the dog is aware of a definite scent; or reverse the state of affairs and supply the master with his dog's past history, and claim that the master would at that moment be aware of the brownness of his boots, although as a dog we are told he never apprehended colour. It may be that this could happen, but it is difficult to reconcile such apprehension with the slow progress made by human beings in learning their sense world, conditioned as this learning seems to be by every previous step. To me it seems more probable that there would be no such scent for the master-become-dog and no such colour for the dog-become-master. The sense-datum itself would in each case be different from what it might have been, had each knower retained his own past history.

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[1] *Proceedings of the Aristotelian Society*, 1915-16, p. 217.

Mr. Russell approved of M. Bergson's use of the analogy of the cinematograph for the mathematician's conception of the world: "The cinema is a better metaphysician than common sense, physics or philosophy. The real man . . . however the police may swear to his identity, is really a series of momentary men, each different one from the other, and bound together, not by numerical identity, but by continuity and certain intrinsic causal laws."[1]

The analogy of the cinematograph film may be suitable for acquaintance, but as Dr. Wildon Carr pointed out in his contribution to the symposium, the pictures on the film will never of themselves make a continuous interrelated whole, however fast the roll may turn. For that there must be a spectator. Just so some one's life history in intimate union with reality, not merely confronting it as a detached spectator, is essential for that differentiation and assimilation which is present even in the simplest cognition.

In spite of his astonishment at my language Mr. Moore himself seemed willing to admit the modification of sense-data by past experience. "There are, I think, some grounds for suspecting that what Mr. Russell asserts in this quotation" (*viz.*, the one given p. 178, referring to the flash of lightning) "really is inconsistent with the view that our sense-data *are* modified by past experience, and is, therefore, false."[2] But Mr. Moore insists that even if this leads us to reject Mr. Russell's view as to the nature of sense-data, such rejection has no necessary bearing on our belief in his view as to the nature of knowledge by acquaintance. "These arguments . . . are . . . an attack, *not* on Mr. Russell's theory of knowledge at all, but *only* on his theory of the physical world."[3] He says that I have "clearly not realised how independent the two theories are". I plead "guilty". My criticism had taken its departure from the passage quoted, p. 178. But are they independent?

In his paper for the symposium of June last, Mr. Moore translated the question, "Are the materials of sense affections of the mind?" into the question, have sensations presented to me "any relation which is of such a nature that the assertion that at any given time they have ceased to have to me that relation implies that at the time in question they have ceased to exist?"

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[1] *Monist*, 1915, pp. 402, 403.

[2] *Proceedings of Aristotelian Society*, 1915-16, p. 222.

[3] *Ibid.*, p. 223.

He considers that to assert of sensations that they are "lived through" is to assert of them that they have such a relation. He finds himself unable to give the affirmative answer to his question on the following grounds: (*a*) "I am unable to discover that they all have to me any relation at all except that which is constituted by their being presented to me". (*b*) "I seem to myself to see pretty clearly that this relation is *not* a relation which has the peculiar property in question."[1] Whether or not Mr. Moore can discuss his problem without involving any doctrine of cognition will depend upon the meaning which he gives to "presentation". He says he trusts to luck that his readers will know what "presented sensations" stand for. Presentation is a word with more than one meaning in current psychology. So far as I understand Mr. Moore's use of it with reference to sensations, it is a name for the same relation which Mr. Russell termed acquaintance with reference to sense-data. If so, his inability to give an affirmative answer to his question will extend as far as his belief in this relation as an adequate analysis of what is involved in awareness of a sense-datum —as far as he follows Mr. Russell.

Once admit that such an analysis is not adequate, but that awareness involves "knowledge about," the differentiation of the present "this" from a past "this," and the assimilation and differentiation of the *quale* of the present this with and from, the *quale* of past experience, then the problem as to the "materials of sense" must include the problem of these relations.

Can we deal with them without involving not only presentation but the life-history of an individual? If we try to separate the presented "this" from the mental pulse of the moment, and say that in its "thisness" it is not necessarily lived through, but only "presented," then we have to explain how the "this" in respect of its *quale* is different from or like to, anything in past experience. At once it will be urged that it is not like to, or different from, *experiencing*, but like to, or different from, past experienced sense-data. True, but there is a difficulty in the word sense-data. We often intend to mean by it sense-data which are what they are whether they be presented to a subject or not, much less whether they be presented to a specific individual; but in fact we are bound here to mean by it the sense-data which have been presented to the subject of the present cognition, and my contention is that these are what they are because they in their earlier turn were differentiated and assimilated. A present "this" in respect of its *quale* must be differentiated from, and assimilated to, sense-data which are past and which were cognised by X. Is this possible unless the present "this" and the past sense-data enter as integral parts into the same history; *viz.* X's mental life? Must they not in respect of their "thisness," when there is cognition, be "lived through" by X?

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[1] *Proceedings of the Aristotelian Society*, 1916-17, p. 426.

To suppose otherwise is to conceive of them as pearls strung on a thread, each pearl it is true coloured by its proximity to the pearls which have already been threaded, but making up a string with them only by reason of that connecting thread. It is of the thread alone we predicate that it goes through now this, now that. So it may be argued it is the knower alone who has a history, his processes of knowing are lived through, but not so that which is given in presentation.

Yet if this be truly so, how can we explain the development of these processes of cognition? Why should differentiation grow finer, assimilation increase in range, if there be no reciprocity between these processes of cognition and the "this" upon which they are exercised, and yet how can there be, if that which is differentiated and assimilated lies outside the stream of mental life.

The unfolding wealth of life, the ever-growing significance of sense-data for guiding and controlling behaviour must, in such a case, be traced back to the potentialities of self-developing activities exercised upon something alien to themselves. Always the sense-datum would be there, "totus, teres, atque rotundus," to use the phrase Dr. Ward applied to the logical concept,—it would be only the imperfect development of the power of sensing that rendered sense-data confused, indistinguishable from one another or mutually inhibitive. Why the imperfect should become more perfect, must then be explained in terms of its own latent capacities. But why the order of that becoming should be determined step by step by the nature of the presented something which stands outside its life, it would be hard to understand. Could we, indeed, understand how mere exercise of sensing, even though each performance were retained, could ever endow a sense-datum with a new significance, and why a number of serial acquaintances, all of the same content and order, are not "crowded together like shades on the banks of the Styx".

The more strenuously the sense-datum is thrust outside the stream of mental life, as "presented" but not "lived through," the more the psychologist is driven back on the conception of self-explanatory mental activities; yet in proportion as they are evoked as self-explanatory, so do these very activities become colourless and indescribable. How does one process of sensing differ from another? In duration, in vigour, perhaps. How is sensing differentiated from remembering or this again from imagining? Prof. Alexander was well advised in trying to spell out such a mental history in terms of one activity, conation. But even he was driven to introducing variety into the monotonous life of conation by covertly reintroducing that which had been exorcised; *viz.*, the presented sense-datum and, in its turn the presented image.[1] The belief in sense-data as "presented" but not "lived through," is to me analogous to a belief in food as that through which the cells of the body grow and develop, but as never itself entering into the life-history of these cells.

Whether "lived through" is such a relation "that to say of anything that at one time it was lived through by me, and that at another it was not, implies that at the second time the thing in question did not exist at all," is altogether another question, and one which requires an analysis of what we mean by existence in this connexion. It is a question towards the answer of which Mr. Moore's discussion of presentation and existence may be a valuable preliminary. It is a question which Mr. Russell's theory of acquaintance with sense-data either ignores or treats as already answered; and it is just this omission or assumption, which renders it impossible to regard Mr. Russell's theory of knowledge by acquaintance as independent of his theory of the physical world.

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[1] "A Conational Psychology," *British Journal of Psychology*, vol. iv., pp. 251-252; *cf. Proceedings of the Aristotelian Society*, 1911-12, p. 202.

V.—THE IDEA OF THE STATE.

By C. Delisle Burns.

The philosophical interpretation of the state depends chiefly upon an analysis which penetrates under the forms of administration. It will find in those forms the embodiments or expressions of ideas and feelings; and it will, therefore, be, in part, a psychology and, in part, a moral evaluation of the comparative worth or importance of popular conceptions and passions. But the analysis should be carried further. We must penetrate beneath the psychological facts and the moral quality of this or that generation in order to discover, if possible, the governing tendency of which the ideas of administrators and the vaguer conceptions of the populace are the surface currents. For there is a tendency, like a tide underlying the ripples and eddies of the hour, which carries us through centuries and is, more truly than any political habit, the "idea" of the state.[1] This tendency is to be analysed and estimated. It is not to be conceived as a conscious plan: nor is it a blind and unhuman *élan*. It is not a permanent and continuous movement, but should be compared rather to a succession of momentary illuminations or periodic impulses, setting in a certain common direction. It is a rational tendency in that it is made up of flashes of intelligent insight into what is possible or desirable; but it is not rational, if by rational is meant argumentative or syllogistic.

The analysis of this "idea" of the state shows, among other important facts, that the state exists for bringing men together, for unifying or co-ordinating their action for common purposes. The particular common purposes for which the state exists, usually called political, are order and liberty, the fundamental conditions for the successful pursuit of all other social purposes. But clearly an organisation which exists for one purpose may be used for the attainment of other purposes as well. Thus a Trade Union, existing for the betterment of the industrial position of its own members, may be used also as an instrument for the general intellectual improvement of the whole wage-earning class. And so we find the state used sometimes as the foundation of a Church, or to provide an administrative system in education. The fundamental purpose remains, order and liberty, to distinguish the idea of the state: and with this purpose go various necessary means, which therefore enter into the idea of the state,—administration, legislation, and other such devices of organisation.

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[1] It will be seen that we mean by the "idea" of the state not the Aristotelian universal but the Platonic idea, corrected so as to include a reference to change. Perhaps this may be the Aristotelian τὸ τί ἦν εἶναι.

We shall not, however, analyse all the elements of the idea of the state, but shall confine our attention to one element in the idea which has been insufficiently analysed in political philosophy. It is that part of state life and state action which is concerned with the relation between states. This does not appear so far to have sufficiently affected the philosophical interpretation of the state; and the problems of allegiance and of responsibility in this regard have been only very crudely treated by philosophers. We take this, then, as our main thesis: *the idea of the state implies that the state exists for increasing the intercourse and interdependence between its own citizens and those of every other state.*

As a preliminary we must note that the important fact is not that there are in existence many states, but that there is a connexion between these states of a definite and analysable kind. We do not wish to call attention to the fact, for example, that the "idea" of a heart or a brain must be derived from the study of many hearts or brains, but to the fact that the idea of the heart must be derived from a study of the relation of a heart to a lung or a limb. It is true that the nature of the state has been studied too much by each philosopher as though the particular state which he inhabited were the only or the most typical state. But the other point is more important for us here, namely, that the connexion between states has been dismissed too summarily in discussions as to the nature of the state.[1] Again, many men seem to be able to study or think out the structure or activities of this or that foreign state: but a knowledge of a foreign state which is an "inside" knowledge, in the sense in which the popular knowledge of our own state is, will not avail for our purpose here. A knowledge of each state separately is not a knowledge of the *relations between states;* and these latter are the evidence to which we refer in saying that the nature of the state is affected by its foreign relations.

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[1] Thus the argument does not refer to the "class-concept" state and its source. No one denies that Hegel, for example, knew that "state" was a class-name applicable to many specimens. The argument so far as the "authorities" go was briefly summarised in my paper in the *Aristotelian Society's Proceedings* for 1915-16, p. 290. But in that paper the evidence from state life, which must be the basis for any theory as to the "idea" of the state, was only briefly reviewed.

It is generally agreed that, so far as its own citizens or subjects are concerned, the state exists to bring them together: but the present view was not always and everywhere held to be true. Machiavelli and others believed that the Prince or King in France, representing the state, did well in setting the people against the nobles. And it is implied in the idea of the balance of powers in Polybius and perhaps in Montesquieu that the state is an equilibrium of *contending* forces. Only by the wildest metaphor can this be called a bringing together or unification of citizens and subjects. The principle "divide et impera" has been adopted by political philosophers as valid and has been practised, as effective, by politicians and rulers. But against this we set the contrary opinion that the state exists for bringing men together; and we find that most political philosophers are of this opinion. The majority, however, think of "men" as citizens of the particular state they choose to discuss. For neither political theorists nor politicians have yet accepted the idea that the state exists for bringing together men of *different* states. We shall omit, therefore, the problem of the relation of the state to the groups of its own citizens and subjects, and concentrate our attention upon what are called the foreign relations of the state. We shall maintain that the idea of the state implies that the state exists for bringing together, unifying the interests and the action of, the citizens and subjects of *different* states.

We may summarily assert that this is the opinion or the implied conception of Plato in the *Laws*, of Petrus de Bosco, of William of Ockham, of Grotius, Locke, Kant and T. H. Green. The opposite conception, that the state marks the distinction and emphasises the difference between citizens and aliens, is the implied opinion in Aristotle, Thomas Aquinas, Machiavelli, Hobbes, Hegel and Bluntschli. It does not appear to be possible to commit to either opinion such writers as Seneca, Augustine, Dante, Bodin, Vattel, and Lotze. Those philosophers who are not greatly concerned with social theory need not be classified: minor writers, sometimes vigorous influences, such as Paine, may be cited by both sides; and we may omit entirely the opinions of sentimentalists such as Ruskin or Rudolf Eucken. It should be understood, however, that the above names are given merely to indicate roughly the distinction of opinion of which we are thinking. It does not in the least affect the problem that "authorities" can be found on either side: and obviously it is utterly unimportant for our present purpose if any of the writers we have named has been wrongly classified. We omit the problem of commentary and interpretation: quite possibly Hegel understood the external relations of the state, although to our mind his language may seem to show him entirely ignorant of certain important facts. We must, however, now return to the problem itself. How far does the idea of the state imply the promotion by the state of the interests which are *common* to its own citizens and to aliens?

Analysing the general tendency in the history of the state we find that the evidence *against* our thesis may be summarised under two heads: (1) militarism and (2) the concentration upon domestic development in every state. As for the first, it is held that the state is essentially an offensive-defensive organisation against non-citizens, because the greatest expenditure in most states is given to armaments, the whole history of external policy is a record of wars and preparation for wars, and nearly every state compels most of the male population to practise killing. Further, militarism is not merely a preparation for war: it is a social situation in which the majority learn obedience without responsibility for their own acts and the few acquire authority by bearing the burden of decision as to what others shall do. This is held to produce order and organisation: for "to organise" means, in popular parlance, to make each man do what some other man thinks he ought to do. But since the state exists for order, militarism is in the idea of the state and so is the justification of militarism, the division and conflict between states. The conception here summarised can be more persuasively expressed in the terms of rhetoric or of that kindly "philosophy of the spirit" in the mists of which all clear outline is lost. It is to be read in Hegel and Treitschke; and, in disagreeably clearer terms, in Hobbes. From this it follows that the idea of the state implies that the state keeps off or excludes aliens from contact with its own citizens: or that, if contact occurs, it is a danger and an unfortunate political accident.

Secondly, it is held that because every state has been more carefully developed internally the external relations of the state cannot be of any importance to the idea of the state. Very little time or thought has been given to changing or modifying the relations between states: and in fact these relations are now not very different from what they were in ancient Assyria, in Greece or in the Middle Ages. The state seems, therefore, to be like an organism within a hard and exclusive shell, within which alone its development shows its nature. The ideal would be a self-sufficing, isolated state; although, because the earth is so overcrowded, no state may embody that ideal. It may be argued also that the fact that states have grown in size and in internal complexity and yet have not abolished war and the preparation for war shows that the real tendency is towards no external change but a more inclusive and self-sufficing whole. This is the philosophical conception, if any, which underlies Naumann's *Mittel-Europa* and the policy of large "blocks" such as were indicated in the Paris Conference.[1]

We reply as follows: War and militarism are not in the "idea" of the state, because (*a*) war and militarism are survivals from the period before there was a state. The organisation of nomadic tribes is modified or even controlled by militarism. The head-hunters of Borneo understand and maintain militarism, but not political administration. The patriarchal family is often militarist. But what can be found so frequently where no state exists cannot be in the "idea" of the state. All the virtues and excellences which Hegel finds in the military class or "spirit" in the state can be found in groups which are innocent of state-life.

Again, militarism is not in the idea of the state because (*b*) the general tendency of state-development has been towards an always widening distribution of responsibility among the members of the state. This is sometimes called democratisation: but in any case it is clear that more and more citizens tend to take over or to accept the moral responsibility for the actions of their state and to bear the political responsibility, in the sense that they are eager to claim the right to risk their own happiness by depending on their own judgment. It is undeniable that the tendency of state life is towards refusing to rulers or administrators the power to make decisions without being criticised. Kingship with its sacredness and its "responsibility only to God" is fast disappearing; and it will clearly be followed into oblivion by the idea of concentrating judgment and administrative decisions in a small group.

Finally (*c*) the undeniably great effects of militarism upon state-organisation (the amounts paid for army and navy, spying or secret service, nationalistic education, etc.) are no proof that these effects are of the essence of the state, but only evidence that the idea of the state is not yet enough developed for us to shake off devices and habits which were useful or necessary in a pre-political world In the same way, the world of industry shows everywhere immense wealth of a few co-existing with degrading poverty of the many. But this is not of the essence of industry. It is a survival from barbaric chaos. It is true that war is not simply a bad habit but an institution,—an institution with political connexions so universal that if it could be eliminated the whole structure of political society might be changed: but, even so, it is not essential to the structure, as cancer and tubercle are not essential to the body.

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[1] Rousseau points out that the larger states become the more terrible wars are. So that all the internal organisation seems to make only more effective the attempts to destroy all organised life.

As for the concentration upon domestic development, this would only prove that one element in the idea of the state had been appreciated more fully than another. At most it is a negative indication with regard to external relations of the state; and that it does not prove the idea of the state to be the separation of the interests of citizens and aliens will be shown when we come to the positive evidence in favour of our thesis. It is, indeed, sometimes said that the spiritual world in which a fully developed man lives has no organisation beyond his own state;[1] and this is perhaps connected with regarding the state as the highest embodiment of a Charity Organisation Society: but this also may be replied to in the positive proof of the contrary conception. That concentration on domestic issues is not an exclusion of change in external contact is indicated by the change in the nature of a *frontier*. In old times the frontier of a state was a barrier, a waste, an interval *beyond* which another state existed. At present a frontier is often only an administrative division, as between Canada and the United States, and it is always a line of *contact*. There are no waste "marches" except the sea.

Analysis of the history of the state shows that (1) the common interests of its own citizens and subjects, for which most men agree that the state exists, can only be secured if the state also aims at the interests which are common to citizens and aliens; (2) there is an increasing impatience as state-life develops with the divisions and differences between governments and still more impatience with the militarism and periodic wars which delay domestic reform or obstruct ordinary conveniences; (3) there is a rapidly developing organisation of the external relations of states on political (non-military) principles. Such indications imply that one element in the idea of the state is *interstate political organisation.* First, to the most simple minds it is clear that order cannot be secure within a state unless it is secure also in coterminous states. This idea was used as an excuse for the intervention of Austria in Serbia and of Great Britain in the Transvaal. The action taken destroyed rather than promoted order; but the aim was order outside the frontiers of the state. The same kind of idea was used to support the United States' war against Spain in Cuba. We may, however, omit the discussion of the methods used; for our point is that every state is concerned in the promotion of order and liberty *outside* its own frontiers, even for the sake of the interests of its own citizens or subjects and quite apart from a general support of the principles of justice. Again, the state is concerned with the suppression of crime and disease; but crime of the most anti-social kind and epidemic disease are independent of state frontiers. Each state, therefore, can only perform its functions for its own citizens adequately by organising its relations and co-operating with all other states. Cholera was only subdued in Europe when the states of Europe acted together: the "white slave" traffic is only controlled in so far as there is agreed common action between states. It follows that it is of the essence of the organisation for order and liberty that it should imply a co-operation not only between its own members but also between all these and those who are not its members. If the state is conceived as a relation between certain human beings, who are citizens or subjects, it must also be conceived as relating all these to non-citizens or aliens. The state is "for" and looks towards inter-state political organisation; without which as a state it is embryonic or primitive, since it cannot at all adequately perform the functions for which it exists. States differ in territory, in number and kind of inhabitants, in methods of administration and legislation; and none is completely organised until the relation of each with the other is organised. Each is unable to perform its fullest and best function until it is interrelated organically with every other, as the limb of the body cannot be perfect unless it is organically connected with all other limbs of the same body.

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[1] *Cf.* Bosanquet in *Proceedings of the Aristotelian Society*, 1916-17.

Secondly, the impatience felt by the more highly developed citizens, when war or the preparation for war interferes with political development or with activities dependent upon such development, is a sign that the underlying tendency of state-life is towards the elimination of war. What has been achieved by the state is the ground and reason for the impatience at war or militarism; the state, therefore, is itself committed to the results of the tendency, from which indeed the state itself arose, and of which the present state is a partial embodiment. But the elimination of war is a mere negative. The tendency we refer to implies in the place of military relations between states, not *no* relation, but a *political* relation.

We do not assert that there is any common consciousness of a need for inter-state political organisation. But we assert that there is, and has been for some time past, a general tendency to regard war and the preparation for war as a nuisance and an interference with civilised life. This was not always so. In mediæval times war was accepted much more generally as in "the nature of things"; and in the aristocratic philosophy which remains to us from the Greek tradition, war is implied as slavery is implied to be a necessary element in the structure or life of society.

With this impatience we may connect the "economic mind" of modern times; for political theory and practice are much more consciously economic in their tendencies than they were in mediæval times. With respect to the relation between states it may be held that commerce is an instrument of policy by which a state can obtain advantages over its rivals, the other states. The other aspect of the same theory is that the state exists to promote the commerce of its citizens, to the disadvantage of the commerce of aliens. We omit the consideration of the economic errors involved in regarding (1) the quantity of commerce as static, so that what one gains another loses, and (2) the sale of goods as a gain to one party only in the sale. The political theory implied in the above conception of state action is that the state exists for promoting the economic wealth of a small group of its citizens and that administration is better if it controls a larger number of persons or a more extensive territory. Only on such grounds could one argue that the state exists to overcome other states commercially. And in opposition to this we say that men are increasingly impatient of state quarrels arising out of economic rivalry. No such quarrel can ever be maintained without a belief that the real reason for the quarrel is a distinction of moral ideals. For the tendency is to suppose that the state supports civilised life and civilised life depends more and more upon reserves of goods drawn from all quarters of the earth. The economics of the world market demands the conception of the state as essentially promoting amicable relations with all other states.

The third proof of our thesis is the formation of inter-state political organisation. The facts are sufficiently well known and we need not describe the various commercial Treaties and Conventions (which provide interstate legislation) and the various offices, the Postal Union, etc. (which provide interstate administration). We pass to the philosophical interpretation of these, in so far as it affects the idea of the state. Clearly such legislation and administration is an embodiment of the political spirit, if we may use that metaphor. The organised community to which a citizen belongs is, therefore, not to be identified with his own state; and the state is not, even in the purely political realm, a complete whole. The average man is not yet, perhaps, emotionally stirred by the new conception of the state or by those activities of the state which, being newer, promise more for the future. The commonplace politician is still troubled by the myth of nationality—Britannia, la France or Deutschland; and he is still obsessed by the narrowest interpretation of sovereignty. But already a change is occurring in the popular mind and, in any case, the commitments of men, driven by necessity, have outrun their imagination: the state is organically related to other states. This does not invalidate the conception of the sovereignty of the state in its strict sense, as final authority for its own citizens. And the new conception will not make the state less worthy of allegiance or affection: for men may serve with great devotion an institution which they know to be only part of a whole. As an instance we may cite the devotion of its members, the Jesuits, to the Society of Jesus. But a devotion to the State as a part, or limb, in a greater body will probably correct the insane chauvinism which sometimes is to be found even in the apparently reasoned statements of professed philosophers.

We do not argue that the formation of a world-state or even of a world-federation of states is implied in the development of the idea of the state. These older forms of political life are inadequate to express the new situation. Inter-state organisation has produced a new type of political relations; and it is this new type which we find to be implied in the idea of the state, when we consider its external relations. This new type of organisation is of practical importance for all citizens, whether or not it results in a League of Nations. But philosophy should not lag behind. The tradition of Rousseau and Kant should not be forgotten; and the philosophy of to-day should be able to pierce to the underlying tendency which shows the true nature of state life. The particular element in state-life, the inter-state relation, to which we have referred, will provide some evidence for dealing with other issues too long neglected by political philosophers as, for example, the relation of state-loyalty to Trade Unionism or to certain forms of Christianity, the limits of the moral responsibility of state-agents for their action, and other problems. All these problems are greatly modified if the nature of the state involves co-operation with and not opposition to other states. And indeed the whole question of the moral obligation involved in citizenship will be transformed if we no longer regard any particular state with that mystic adoration which is implied in the Hegelian philosophy.

It may not be seemly in the serene groves of philosophy to make too pointed an application of philosophical principles to current events: but we may point out some general consequences which would follow from the acceptance of our idea of the state. First, it would follow that, if the state may demand military service because of the evils it has inherited from pre-political life, the state may and should repress the impulses, speeches and actions which maintain or create division and hostility between states in times of peace. The method of repression may be subtle and indirect: it certainly could not be punitive or vindictive: but it is implied in the idea of the state above described that bellicosity in time of peace is a crime. Secondly, it would follow that the highest service of the state is not defending the state from others but promoting directly the inter-state organisation for common purposes of citizens and aliens. Thirdly, it would follow that much thought and imagination need to be given to the development of that element in the idea of the state which we have emphasised in this essay. Fourthly, the state is not a "summum genus" in political categories, still less is it so in general social theory. Fifthly, philosophers should perhaps read blue-books, dispatches and "social documents," before attempting to compose commentaries on Plato and Aristotle.

VI.—DISCUSSIONS.

FORMALISM AND THE *A FORTIORI*.

THE contributions of Dr. Mercier and Mr. Shelton in No. 103 do not call for as much criticism as Mr. Pickard-Cambridge's in No. 102.[1] For, as Dr. Mercier notes, our discussion is taking an almost unprecedented course among philosophers, and threatening to end in complete agreement. Partly, perhaps, because it never was my aim to 'wring' Dr. Mercier's 'withers, or to deny Mr. Shelton's claims to be a consistent believer in Formal Logic. I must acknowledge too that both have made me very handsome concessions.

(1) Dr. Mercier has disclaimed the traditional notion of 'validity'. He reduces it to "the personal attitude towards an argument or a conclusion" which treats it as incontestable (p. 340). A logic which is willing to recognize the part personal attitudes play in thought is incontestably bound to become humanistic.

(2) He confesses (*ibid.*) that when he calls an argument "generally valid," he only means "in most cases," and has not necessarily considered the rarer and less obvious cases in which its conclusion may be contested. This is not only disarming, but accepts the true analysis of what are *called* 'universal' truths, as I think I have shown in my article in No. 89.

(3) Dr. Mercier's exposition (p. 341) of the $A > B$, $B > C$, etc., form can hardly be bettered; I welcome his conclusion that "for one purpose A may be longer than B, for another purpose A may not be longer than B," and trust that he has made this matter so clear that Mr. Pickard-Cambridge can understand it. I must, however, point out, first, that *I* never argued that because it did not *always* follow that because $A > B$ and $B > C \therefore A > C$ it *never* did (*cf.* pp. 341, 345), and secondly, that the 'illogicality' of "stating the premisses for one purpose and applying them for another" needs to be qualified. For do we not *always* apply premisses we have found to hold for one purpose to another, when we *use* premisses at all? We are *always* arguing from one case to another, or applying a principle to a fresh case. So to stigmatise this procedure as 'illogical' seems injudiciously to widen the gap between actual reasoning and logical theory.

(4) Dr. Mercier admits that the illustrations conventionally

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[1] *Cf.* No. 104.

used by logicians are "not real reasonings at all, but are merely verbal forms" (p. 340). This I hail as the most valuable concession of all. For once it is granted, the whole edifice of Formal Logic collapses: I fear therefore that no logician who retains any taint of Formalism will concede it.

In addition to these concessions I am also grateful to Dr. Mercier for his account of how he conceives the relations of 'validity' and 'truth'. To equate the 'valid' with the *incontestable* is as large a departure from tradition as to translate it into English, and to conceive the 'strong' as the logically valuable. But incontestable is a large order. It is as hard for mortal arguments to become incontestable as to *start* from (absolute) truth, as both Dr. Mercier (p. 344) and Mr. Shelton (p. 355) still seem to require them to do. And Dr. Mercier hardly recognises the full scope of this difficulty, which seems to me to render nugatory his distinction between the categorical and the hypothetical syllogism and ultimately his whole doctrine of the existence of 'valid' *forms*.

As I understand it, his doctrine is (*a*) that 'validity' pertains only to hypothetical arguments, which state necessary connexions of ideas, but assert nothing about matters of fact. In these "we run no risks," and have forms which "guarantee the validity of the conclusion," so that it cannot be contested (p. 345). But validity has nothing to do with truth. A 'valid' conclusion may be "false, absurd, nonsensical or inconceivable". (*b*) If, however, "we desire to arrive at truth we must start with an assertion of truth," and open with a *Because* . . . (p. 344). We then "deal with facts, or with what are asserted to be facts" (p. 345). *This* procedure incurs risks; "at every step there is a liability to error". Its truth is *material*, and it may be insuperably difficult to satisfy its conditions. Moreover "material reasoning may be invalid," though we have not noticed it. The A which looks so like B as to be called B, may not after all be a B for the purpose of the argument. Or "there may be B's not C's that we have forgotten or overlooked or had no chance of experiencing, and A may be one of these". If so the conclusion is got *invalidly*, though it is not necessarily false, and may chance to be true. We can then clear our conscience by confessing our sin; if we declare the conclusion "probable or possible, the reasoning is valid" even "though the conclusion may not be true" (p. 345).

Now this doctrine is assuredly a great advance on anything logicians have hitherto propounded on the subject. Nevertheless it does not seem to remove all the difficulties.

(1) It is clear that a descent must somehow be effected from hypothesis-spinning into the world of fact. If this is not done, the incontestable 'validity' of the hypothetical form remains irrelevant to the procedure of actual reasoning. Now this descent must take the form of an assertion that some hypothesis *applies in fact*. But as a categorical assertion it will have the logical

character of such assertions. It will *not* be 'valid,' and may be in error. Hence we shall still have to trust to material truth to bring formal validity into action, and the risk no hypothetical reasoning can disclaim is that of *failing* to apply to reality.

(2) Mr. Sidgwick has shown that there are not *in fact* any incontestable forms. . Even the Syllogism only seems 'valid,' if we abstract from the application thereof. So soon as we try to use it, its middle term may develop a fatal 'ambiguity'. I have shown in this discussion that the *A Fortiori* is no more exempt from this defect than other 'forms'. True, when a formal reasoning thus becomes invalid, this is always due to the *material* circumstances of the case. It may always be contended therefore that the form 'as such' is all right and that a 'material' fallacy of Accident has defeated the conclusion (*cf.* my *Formal Logic*, pp. 200, 355). But is it not futile and fatuous to conceive 'validity' as a valuable quality which forms possess only while no one tries to use them?

(3) In considering Dr. Mercier's account of material truth let us first note the ambiguity of the dictum that "to arrive at truth we must start with an assertion of truth". Is he speaking of *truths* or of *truth-claims?* It makes an enormous difference whether we are dealing with "facts *or* with what are *asserted* to be facts". If he means merely that a *truth-claim* must be asserted, he asserts a truism; for it is a *formal* impossibility to frame a judgment which does not *lay claim* to truth. But to *assert* a claim and to *prove* it are of course very different things, and apparently no claim is ever proved to the extent, and in the way, contemplated by Formal Logic. If, however, an absolutely certain incontestable truth is demanded, a *material* impossibility is asserted. If then we need so much as this to start from, we shall never get under weigh. To start at all, we shall always have to employ premisses which either avow or conceal that they are only hypothetically true. 'Material' truth, therefore, can never be purged of risk. It is never 'valid,' in the sense of 'incontestable,' though many 'truths' at all times are not, in fact, contested. It is always 'invalid,' in the sense that a question may always be raised whether the 'B' which is predicated of A in the major premiss can be identified with the 'B' which is predicated of C in the minor.

(4) Nor can a conclusion become 'valid' by claiming to be 'only probable'. 'Probably true' here only means true in an unspecified percentage of cases, *i.e.*, true in some cases, though not in others. But this is not enough to satisfy the claims of the Syllogism. To regard 'valid' conclusions as only probable would render universal conclusions impossible. It would mean that not AAA, but only AAI was a 'valid' Mood, and lower *Barbara* to the level of a 'subaltern'. I cannot think that Dr. Mercier has the heart to be so cruel to the most sacred traditions of Formal Logic!

(5) In view of these difficulties about his conception of 'validity' I cannot understand how he can say on page 349 "I think the validity of the *a fortiori* is unarguable". On his own showing its conclusion *may* (I should say, *must*) be only probable, on account of undiscovered flaws in the identity of the terms, whether a disputant sees it 'intuitively' or not. And if 'valid' means incontestable and the 'validity' of the *a fortiori* is really incontestable, how comes there to be such an argument about it?

On the other hand I can cordially applaud Dr. Mercier's insistence that Mr. Pickard-Cambridge has overlooked the important case of the objector to an argument who urges that the disputed 'case' does not properly come under the 'rule' applied to it. It is, I think, one of the many fatal gaps in the logical armour of 'Idealism' that there is never any discussion of the *choice* of cases and rules. It is always assumed that once it has been proclaimed that every particular must come under a 'universal,' the logician's duty is done, and that the questions *which universal?* and *why under this rather than that?* are meaningless. Hence the pathetic incapacity of 'logic' to aid in the advancement of the sciences, which are unceasingly engaged in formulating and testing alternative theories for apprehending the facts.

Coming next to Mr. Shelton, I must acknowledge and applaud the concessions contained in his agreeing (1) "that the term validity should not be applied to material implications" and that it is "quite true that a number of modern logicians are guilty of considerable confusion of thought and are without any adequate or consistent philosophy of the logic they approve and teach" (p. 354), and (2) "that no reasoning, no strictly logical argument is in itself a guarantee of material or empirical truth" (p. 355).

But Mr. Shelton thinks that these points do not suffice to justify my strictures on Formal Logic. I can only reply that his defence of Formal Logic is fully as damaging as my accusation. He urges (*a*) that it shares the inability to guarantee material truth with mathematics. But the difference surely is that the mathematician recognises that there is a question of the *application* of pure mathematics to physical reality, while the logician has *not* seen that there is an analogous question whether *any* logical form applies to any reality.

(*b*) He declares that the Schoolmen knew all about my difficulty, but inferred "from the same premiss that empirical truth is of an order inferior to rational truth and lies on a lower level" (p. 355). I marvel that Mr. Shelton should find this inference "quite as plausible". For once it is seen that the formal validity of a reasoning does nothing to secure its material truth, it surely follows, even in the case of a 'demonstration,' that the latter *has to come true independently and empirically*, and that the former can at most guide expectation. This is so plain, and the acumen of the Schoolmen deservedly stands so high, that it is incredible that they should have deduced their belief in the superiority of *a priori* truth from a premiss which irrefragably establishes its inferiority.

(*c*) Lastly Mr. Shelton plunges into an utter dualism between 'logic' and 'common sense'. "The conclusions of practical life are commonly arrived at by processes which are not reasoning at all, and often by very bad reasoning" (p. 356). But it is not the business of logic to set them right. It has "to formalise only a small part of what we will call practical reason," most of which is "empirical and instinctive". What terrible misology! I am amazed that Mr. Shelton should think this a satisfactory answer to the questions about the place of logic in life. For it seems so much easier and more reasonable to infer from the situation that the logical analysis which has confessed its inadequacy and ended in this *impasse* has manifestly gone astray.

F. C. S. SCHILLER.

WHAT DOES BERGSON MEAN BY PURE PERCEPTION?

On pages 26-30 of "Matter and Memory" (English Translation) Bergson considers "how conscious perception may be explained". It is very difficult to assign any precise meaning to the contents of these pages. Living beings are said to be "centres of indetermination," and "their mere presence is equivalent to the suppression of all those parts of objects in which their functions find no interest. They allow to pass through them, so to speak, those external influences which are indifferent to them; the others, isolated, become perceptions by their very isolation. Everything thus happens for us as though we reflected back to surfaces the light which emanates from them, the light which, had it passed on unopposed, would never have been revealed" (pp. 28, 29). "Our representation of things would thus arise from the fact that they are thrown back and reflected by our freedom" (p. 29). The passage should, of course, be read in its entirety; but these extracts seem to give the main points. If Bergson merely wished to give a picturesque description of the fact that we are most impressed by those aspects of things in which our own wants make us interested, his position would be plain enough. But he evidently means something more, and at first sight the passage seems intended to be a revelation of the actual process of perception; but from this point of view it is not easy to give a clear meaning to it. Bergson has begun (p. 26) by asking "that perception should be provisionally understood to mean not my concrete and complex perception—that which is enlarged by memories and offers always a certain breadth of duration—but a *pure* perception, I mean a perception which exists in theory rather than in fact, and would be possessed by a being placed where I am, living as I live, but absorbed in the present and capable of giving up every form of memory, of obtaining a vision of matter both immediate and instantaneous".

It may help us to judge whether Bergson has a theory of perception which admits of clear statement, if we try to understand what he means by "pure perception," and put together a few passages from other parts of his book in which he speaks of it. The phrase is one which he rather frequently uses and to which he evidently attaches importance, for it provides him with the key to the reconciliation of spirit and matter (p. 294).

In the passage quoted above, pure perception is perception from which memory is supposed to be entirely eliminated, and we are told that such a perception would "give a vision of matter both immediate and instantaneous". Now at this stage of his book (p. 26) matter for Bergson *ought* to be, not the matter of the physicist, but matter as defined by him on the first page of his introduction, *i.e.*, "an aggregate of images," which he tells us, is the conception of common sense. The work of memory in perception, we have been told (p. 25), takes two forms—(1) "it impregnates the present with the past," and "covers with a cloak of recollections a core of immediate perception"; (2) it "prolongs a plurality of moments one into another" and "contracts a number of external moments into a single internal moment". Now if matter is an aggregate of images in the ordinary sense of the word, and if pure perception gives us an instantaneous vision of the images, and memory brings suitable images from the past to enable us to give a distinctive character to the images thus received, we have a description of ordinary or concrete perception which presents no special difficulties but is not startlingly new. But this cannot be all that Bergson means, for it leaves out altogether the second function of memory. The power which enables us to prolong a plurality of moments into one another and contract a number of external moments into a single internal moment is not what the plain man means by memory, and the moments with which it deals must be something very different from images —they only begin to have a meaning in connexion with matter when matter is no longer an aggregate of images but is something like the matter of the physicist.

When Bergson speaks of "pure perception," does he mean the perception of images in the ordinary sense of the word? He certainly does so sometimes. On page 312, in his summary and conclusion, speaking of "the experience which is regular and common to all men," he tells us: "This experience, the necessary field of our activity, is, on the contrary, what we should start from. Pure perceptions therefore, or images, are what we should posit at the outset." We may fairly assume then that in the passage on page 26 he believed that he was positing pure perception as the perception of the images, of which we become aware in our ordinary experience. It is true that in that passage he guards his position by telling us that, whatever theory of matter we adopt, even if we reduce it to mere movements, these movements are still images. But the answer to this is that the movements as movements are *not* images of which the human mind becomes aware in ordinary perception. And we may fairly ask that Bergson should make his pure perception either one thing or the other—either the perception of what common sense means by an image, or the perception of the movements or vibrations into which science resolves matter. Does he do so? On pages 237-238, Bergson, in a passage in which he is trying "to attenuate the opposition of quality and quantity," gives us a pure perception which is evidently not the perception of what common sense means by images. It should be remembered that for Bergson "concrete perception" is our ordinary every-day perception as contrasted with pure perception:—

"Matter, as grasped in concrete perception, which always occupies a certain duration, is in great part the work of memory. Now where is precisely the difference between the heterogeneous qualities which succeed one another in our concrete perception and the homogeneous changes which science puts at the back of these perceptions in space? The first are discontinuous and cannot be deduced from one another; the second, on the contrary, lend themselves to calculation. But in order that they may lend themselves to calculation, there is no need to make them into pure quantities: we might as well say that they are nothing at all. It is enough that their heterogeneity should be, so to speak, sufficiently diluted to become, from our point of view, practically negligible. Now if every concrete perception, however short we suppose it, is already *a synthesis made by memory, of an infinity of 'pure perceptions'* which succeed each other, must we not think that the heterogeneity of sensible qualities is due to their being contracted in our memory and the relative homogeneity of objective changes to the slackness of their natural tension?"

All this would have been much clearer if Bergson had given an illustration of "the homogeneous changes which science puts at the back of the perceptions". Ultimately (p. 268) he gives the illustration of the vibrations which occur in the different coloured rays of light: but it is deferred until he has developed his doctrine of motion, and in place of a matter which means an aggregate of images has given us a matter which is resolved into motion and nothing else.

We may give the facts as they appear in the ordinary textbooks, and try to apply them to the passage just quoted from pages 237-238. The red rays of light are said to be due to vibrations at the rate of 451,000,000,000,000, per second: this is the least number in any colour of the spectrum. As we go along the spectrum the vibrations are said to increase till in violet they reach 789,000,000,000,000. Now these vibrations are obviously Bergson's homogeneous changes which science places at the back of perception. The concrete perception of red is of course heterogeneous, and it is this which Bergson considers to be a synthesis of an infinity of "pure perceptions". Now does Bergson mean that each "pure perception" is the perception of a single vibration, and that memory contracts these into our concrete perceptions of the colours? That certainly seems to be the meaning of this passage, and it also gives us the clue to the second function of memory on page 26, by which it was said to "contract a number of external moments into a single internal moment". It is difficult to see any other external moments in this case except the individual vibrations.

If the pure perceptions are the perceptions of individual vibrations, they cannot be perceptions of the images of which human beings are aware; for the individual vibration will presumably be the same, whether the colour is red or violet. The difference of colour will only begin when the vibrations are collected. It seems to follow that at this point, just as matter has ceased to be an aggregate of images in the ordinary sense of the word, so pure perception has ceased to be the perception of what common sense means by image. Bergson nowhere tells quite clearly that by pure perception he means the perception of each individual vibration. But it is not easy to say what other meaning to attach to it in such passages as the following:—

"Spirit can rest on matter and unite with it in the act of pure perception, yet nevertheless be radically different from it. It is distinct from it in that, it is even then memory, that is to say a synthesis of past and present with a view to the future, in that it contracts the moments of this matter in order to use them and to manifest itself by actions which are the final aim of its union with the body" (p. 294).

"Pure perception, which is the lowest degree of the mind—mind without memory—is really part of matter as we understand matter" (p. 297).

But the question is complicated for Bergson by the necessity of harmonising his doctrine of the relation between mind and matter with his doctrine of real duration. The time to which the varying numbers of vibrations correspond is the homogeneous time of science, which to Bergson is a mere fiction and an idol of language. Real duration is the duration lived by our consciousness. The homogeneous time of science is infinitely divisible, and when we speak of it, no difficulty attaches to such numbers as 450 billions of vibrations in a second. But it is quite different with the real duration of our own consciousness; this, Bergson tells us, has "its own determined rhythm," and "a given interval can only contain a limited number of phenomena of which we are aware;" and "it is impossible to quicken the circulation of our inner phenomena". It is not easy to see why the real duration of our consciousness should not be capable of infinite degrees of expansion and compression. The only obstacle seems to be the statement on page 272 that "the smallest interval of time which we can detect equals, according to Exner, $\frac{1}{500}$ of a second". One would think that a limit stated in terms of homogeneous time could have no bearing whatever on Bergson's real duration. He does, however, seem to feel that there is a limit of this kind in the case of our consciousness: but he gets over the difficulty by saying that "it is possible for us to imagine many different rhythms, which, slower or faster, measure the degree of tension or relaxation of different kinds of consciousness" (p. 275). In this way we get to the conclusion that "to perceive consists in condensing enormous periods of an infinitely dilated existence into a few more differentiated moments of an intenser life, and in thus summing up a very long history". It seems to follow that, as we ourselves undoubtedly do perceive, we must succeed in condensing the billions of vibrations of which Bergson speaks in spite of limits imposed by our own determined rhythm. But the whole passage leaves us rather doubtful whether at this point Bergson means pure perception to be the perception of an individual vibration or of a contracted group of vibrations. If, however, the latter is meant, we should have to ask how they came to be contracted, and no answer seems to be forthcoming. Perhaps, however, as Bergson has told us that the concrete perception is a synthesis of an infinity of pure perceptions we are meant to infer that the pure perception, which exists in theory rather than in fact, is exempted from the necessity of conforming to the rhythm of our own consciousness.

On the whole then we seem obliged to believe that when Bergson is dealing with a 'matter' which is resolved into numberless vibrations, pure perception does for him actually mean the perception of a single vibration, and that concrete perception means a group of these perceptions contracted by memory. It seems hardly necessary to point out again how remote this is from a 'matter' which is an aggregate of images, and from a pure perception which gives an instantaneous vision of images. In plain words Bergson seems to adopt a double attitude, and to move from one position to another, without giving notice to his readers. He wishes his perception to be what common sense means by the word. But at the same time he wishes to bring it into the closest possible connexion with the homogeneous changes which science puts at the back of it. He has indeed stated (p. 27) that the most rudimentary movements are images; but they are not images in the sense in which he used the term, when he started by telling us that his conception of matter as an aggregate of images was simply that of common sense. It seems to follow also that the passage on pages 28, 29, with which I started, is not an analysis of the actual process of perception, but is a metaphorical description intended rather to stimulate the reader's imagination than to convey precise ideas.

J. HARWARD.

VII.—CRITICAL NOTICES.

Mens Creatrix. By WILLIAM TEMPLE. London: Macmillan & Co., 1917. Pp. xiii, 367.

THE writer of this article desires in the first place to thank Mr. Temple personally for pleasure and profit derived from repeated reading of a book so admirable in its main features. *Mens Creatrix*, is that rare thing, a work of popular philosophy in the honorific sense of the adjective; it is philosophical because it is a determined attempt to deal thoroughly with the ultimate issues and values of life, popular in virtue of its lucidity, its freedom from the baggage of superfluous erudition, its wealth of felicitous illustration. It is also a notable contribution to Christian apologetics by an author who sees clearly where the real difficulties lie and nobly refuses to take refuge from them in one of those meaningless "Christianities *minus* Christ" which have been so numerous since Hegel taught the Lutherans of Germany how easily these ephemeral structures may be run up. Of course I do not mean to say that I should like to commit myself to all the positions adopted anywhere in Mr. Temple's book. In particular I should be inclined to dispute nearly all his "epistemological" views, and—though here I speak with the hesitancy of a very tiro—I think his theology exceedingly heterodox on at least one point of importance. And I do not suppose Mr. Temple expects any reader to agree with all the very decided judgments he passes on questions of literature and art. Personally I have much sympathy with his dislike of most of the poetry of Tennyson and Milton, but I should not like to make concurrence in this feeling into an article of a literary *Credo*, and still less to expect any general agreement on such a question as "What is the greatest picture in the world?" And,—perhaps it was a mere recollection of Nietzsche,—but when I read Mr. Temple's reference to Wagner's "cosmic opera" *Tristan und Isolde*, I felt tempted to wonder whether "comic" would not be the truer epithet. (Anyone who attends carefully to the second Act of that work will understand what I mean.) I may also, perhaps, be allowed to cherish a doubt whether the late Robert Browning (though the author of some admirable poems), really deserves to be exalted to a place beside Plato and St. John the Evangelist as an authority in spiritual things. I own that to me Dante or Shakespeare or Wordsworth would have seemed more worthy of the distinction.

Mr. Temple naturally enough divides his work into two books—the one is mainly philosophical, the other theological. Bk. I., *Man's Search*, might well have as a motto *Intellectus quaerens fidem*. It is an elaborate review of the ideals we set before us in Science, Fine Art, Conduct and Religion, and seeks to show how these various ideals of Truth, Beauty, Goodness, All-inclusive Unity point towards the Religion of the Incarnation as their complete and harmonious embodiment. In Bk. II., *God's Act*, we deal rather with *fides quaerens intellectum:* it is an interpretation in terms of philosophy of what is originally a religion accepted by an act of faith. The object is to show how closely "God's gift" in the Incarnation of the Divine Word, as experienced in the Christian life and understood by Christian theology, corresponds to the Good which Philosophy shows to be sought alike in Science, in Art, and in the "practical life". As regards these various forms of the Quest, Mr. Temple rightly takes the position that no one of them can be simply identified with any other. They are different and independent, but in the end they converge, for their object, though many-sided, is in the end one and the same Good.

In the chapters which deal with Science, as it seems to me, Mr. Temple is not quite true to this position. He is very strongly impressed, mainly I think as a consequence of mistaken logical theories, with the alleged shortcomings of the intellect, and frequently, though not with entire consistency, seems to treat knowledge as an inherently inferior attitude of mind to its object by comparison with aesthetic appreciation of beauty. Hence the impression left on my own mind is that Mr. Temple's treatment of his subject steadily improves as he proceeds. His interest in Knowledge seems to me half-hearted and superficial in comparison with his interest in Art and Conduct. As far as Science is concerned, he hardly seems to be wholly faithful to the conviction that all the roads to the divine, though different, are co-ordinate. It is significant that though he is very willing to talk about the *μαθήματα*, he does not talk of mathematics at all like a mathematician, and is thus, in one important respect *à son insu* more of an Aristotelian than a Platonist. Similarly he allows himself to repeat very dogmatically certain logical theories of the ἓν καὶ πᾶν metaphysicians, of which some seem to be merely false, and others, if true, to be inconsistent with his own philosophical convictions. Right thinking on these logical and mathematical points is of such supreme importance for the very foundations of a theory of knowledge that I must ask the pardon both of Mr. Temple and of my readers if I dwell on the matter in some detail.

Even in the chapter which serves as introductory to the whole work, I find myself already breathing a trying atmosphere when I read, in illustration of the doctrine that "truth is a system" the statement that "tridimensional rectilinear space is the system articulated in Euclidean geometry" (p. 17). I am not sure of the precise meaning, but there seems to be a suggestion that non-Euclidean geometry is distinguished from Euclidean by dealing with figures of more than three dimensions, and again that straight lines are not found in non-Euclidean geometries. Both suggestions, if they are intended, are, of course, simply erroneous and such as could never have been made by anyone who had given as much as a week to the study of the outlines of the subject. By comparison with other passages in which Mr. Temple recurs to the topic of geometrical method I am led to suspect that he also intends to say that the various propositions of Euclid are statements *about* "tridimensional rectilinear space," that this "space" is the "ultimate subject" about which they make assertions. This, however, is a serious error. What Euclid reasons about is the properties of figures of various kinds, straight lines, circles, pyramids and so on. He never has occasion to mention "space" at all. In fact *pure* geometry does not deal even with such properties of figures as Mr. Temple plainly has in mind when he talks of geometry. From the facts that he speaks as if the "non-Euclidean geometries" do not apply to "actual space," and that he illustrates the character of pure geometry by reference to the theorem about the sum of the angles of the plane triangle (Eucl., I., 32), which does not hold good in non-Euclidean geometry, it seems clear that by geometry he means from first to last *metrical* geometry. Now pure projective geometry takes no account at all of metrical properties, and as a consequence, the projective geometry of "Euclidean space" is identical with that of "non-Euclidean space". The whole difference between the systems of Euclid, Lobatschevsky and Riemann or Klein only arises when we come to lay down conventions about measurement. The famous fifth postulate (wrongly called by Mr. Temple an *axiom*) of Euclid, on which the peculiarities of Euclidean geometry depend, is just such a convention. It amounts to the assumption that if two straight lines a and b in the same plane do not intersect, a common perpendicular to them can be drawn from any point of either, and that the *length* of this common perpendicular (the *distance* of a point on one line from the other line) is constant. Or, more briefly put, Euclid assumes that "parallel" straight lines are equidistant. If we do not accept this postulate, there are only two alternatives; (a) "parallel" straight lines are *not* equidistant, (b) there are no "parallel" straight lines in the plane. If we assume (a) we are led to the geometry of Lobatschevsky and Bolyai, if (b) to that of Riemann or Klein. In both cases, it is clear that measurements will be expressed by means of some convention other than Euclid's. But we can establish such a correspondence between the various conventions that every proposition of Euclidean geometry has a definite corresponding proposition in each of the other two systems answering to it, and *vice versa*. Hence the *philosophical* importance of the difference between the three geometries seems to be *nil*, and in particular, there seems to be no sense in the view that one of them is the geometry of "real" or "actual" space, the others of a "possible" but not "actual" space.

From a philosophical point of view Mr. Temple commits a much graver error when he says (p. 37) that "Euclid is concerned with the isosceles triangle as such, but he cannot move a step without the particular triangle *ABC*. . . . This weakness . . . is inherent in all thought." Here there is a double misapprehension. Mr. Temple wants to advocate Kant's erroneous view that sense-data are elements in all our knowledge. To prove this he argues that Euclid regularly proves his propositions in the first instance for the visible figure, triangle or what not, which appears in his diagrams. But the truth is that the thing which Euclid calls "*the* triangle *ABC*" is not the thing shown in the diagram. The thing in the diagram can never be known to be really isosceles, and usually mere inspection is enough to show that it is not isosceles. "This triangle *ABC*" is as much a νοητὸν apprehensible only by thought as "the class of isosceles triangles". Euclid argues not from αἰσθητὸν to νοητὸν but from an individual νοητὸν to every member of a class of νοητά. His diagrams are strictly "illustrations" in the same sense as the pictures in an "illustrated edition" of a poet. The second mistake is the assumption that because Euclid usually employs a diagram, all mathematical, or at least geometrical, reasoning requires the use of diagrams. Mr. Temple forgets that there are branches of mathematics which deal with objects which cannot be even approximately symbolised by a diagram. The Theory of Functions, for instance, is full of examples. The point requires to be insisted on, because it of itself disposes of the Kantian dogma that all knowledge involves a synthesis of sense with thought. If this is false, agnosticism, at least of the Kantian type, is undermined at its base.

Still more important is the question whether Mr. Temple is justified, or even consistent with himself, in accepting, without question, the whole logical doctrine most familiar to us from the writings of Prof. Bosanquet. Is it true, for example, that every conclusion "modifies" its own premisses? This would be a very important and to my mind a very painful truth, if it were true at all. Hence I am glad to see that Mr. Temple's own illustration seems enough to prove its falsehood. He takes as his example the arguments for the Copernican view of the solar system. But what are the premisses in this case. If we may take Newton's *Principia* as fairly representing the "argument," they are (*a*) the results of the observations of Kepler, Cassini, Flamsteed and others, (*b*) a few geometrical propositions on the properties of the conic sections and the hypocycloid, (*c*) Newton's own assumed (or postulated) laws of Motion. Which of these groups of premisses is "modified" by the conclusions of the *Principia?* Not (*a*) for the *phaenomena* recorded by Cassini and the rest remain just what they were before; the whole object of the argument is to "save" them, not to "modify" them. Not (*b*) for Newton's demonstration makes no change in the properties of the conics or the cycloids. And certainly not (*c*), the Newtonian "hypothesis" itself. What *did* undergo modification was merely the astronomical beliefs of those persons who were converted by Newton's reasoning. But the proposition "some (or most) men believe in the theory of Ptolemy or in the theory of Descartes" is not one of Newton's premisses, while the "apparent motions," which *are* part of his premisses are not "modified" one jot by the fullest assent to every one of the propositions of "Mr. Newton's incomparable book". It is true, as Mr. Temple says, that if by "the facts" we mean "the real state of the case," we cannot begin an investigation by recording the "facts," because we do not know what they are until the investigation is ended. But to say that the "conclusion" of the inquiry "modifies" the facts is merely paradoxical without being true. Unfortunately too many Oxford tutors seem to enjoy maintaining untrue paradoxes; they call it "systematic" philosophy. There are liberal shepherds in ruder climates who give the performance a grosser name.

So with the alleged discovery that the process of getting knowledge is "circular". So far as I can gather the meaning of this revelation, it only means that the ultimate postulates of science are not evident on inspection to every one, and that as our knowledge of fresh appearances increases our postulates receive new determinations. It has never been shown that it is really necessary for science that any of its propositions should be self-evident. The account of method given by Socrates in the *Phaedo* (still to my mind by far the best general account), says nothing of self-evidence at all. Nor has any reason ever been given for denying that *some* postulates are truths so simple as to be evident on inspection to any man of ordinary intelligence. And it is always an open possibility that even a postulate which could never have been formulated without previous comparison of multifarious observations, may, *when it has been formulated*, be seen to be true by direct inspection on the part of anyone who understands its meaning. Hence the alleged "circularity" of the process of establishing truth seems to me only another false paradox. If there really were a "circle" in scientific reasoning, I certainly do not see how it could be got over by maintaining with Mr. Temple (p. 17) and I suppose Prof. Bosanquet, that the "middle term" in an inference is "the system itself as a whole". For this is certainly false. For one thing we, when we reason, *are ex hypothesi* never acquainted with the whole "system," and consequently on these terms we could never draw a valid conclusion from *any* premisses. And for another, though all demonstration ἐκ προυπαρχούσης γίγνεται γνώσεως, we do not require *all* the true propositions which belong to a given "universe of discourse" to prove any one specific proposition of the "universe," but only some of them.

I suspect that Mr. Temple greatly underrates the efficacy of deduction because he identifies deduction with one of its own sub-species, subsumption. At least he seems to regard the traditional syllogism as the type of all deduction, and only mentions non-syllogistic deduction incidentally as a kind of curiosity. He quite forgets that while pure mathematics is wholly deductive it rarely employs a syllogism. This, I fancy, is why he regards the apodeictic certainty attained in mathematics quite wrongly as due to the purely nominal character of mathematical definitions. Of course no mathematical definition is really a premiss in mathematical reasoning. The ultimate premisses are always postulates either (1) asserting the existence of indefinable entities, such as the point, straight line, or plane, or (2) asserting some undemonstrable relation between these indefinables. Theoretically all definitions could be abolished by merely writing out a group of symbols in full instead of introducing an abbreviated sign which is declared to be equivalent to the group "by definition". The only real reason for using definitions is the practical one of avoiding cumbrous and complicated groups of symbols. If, *e.g.*, we liked to say on all occasions "figure with three straight sides" we need never mention rectilinear triangles. The real reason why "mathematical certainty" is confined to mathematics was long ago explained by Descartes. It is that the primitive *indefinables* of mathematics are few and easy to apprehend, and the primitive *indemonstrables* also few and possessed of a high degree of plausibility. In short, I feel bound on these logical questions to urge that, with all respect for Prof. Bosanquet, his *Logic* is not so safe a guide as an older work which was once regarded in Oxford with respect,—Aristotle's *Organon*. Mr. Temple seems to me unconsciously to have given the *coup de grâce* to the "system" as an omnipresent "middle term" by repeating, in illustration of its functions, the story of the liberal theologian who laid it down that there surely must be a "sort of a something". That is just what the "system" seems to be, and for that very reason it seems as poor a substitute in logic for a precise and definite middle term as it is in theology for God.

Another theory of Prof. Bosanquet's on which Mr. Temple lays stress, though I think it quite incompatible with his own most important positions, is the doctrine that a completed knowledge would form a huge "disjunctive judgment" with "Reality" for its subject. The consequences of this view seem to me fatal. It leads at once to the theories that pure Mathematics is the *only* type of true knowledge, that knowledge can be only of the "universal," that the relation of Cause and Effect is identical with that of Ground and Consequent, and that "the temporal" is unreal. As this last consequence is fatal to any philosophy which takes either practical morality or practical religion seriously, I am glad that Mr. Temple refuses to accept it, though he does not seem to see that in rejecting it he is turning his back on the whole logical system of Prof. Bosanquet. The odd thing is that neither he nor

Prof. Bosanquet seems to understand that a completed knowledge which could be put into the form of an infinite disjunction would not contain a single existential truth about matters of fact. The knowledge of the omniscient knower could be formulated thus. Reality is such that if the conditions E_1, E_2 . . . E_n respectively are fulfilled, you have the results s_1, s_2 . . . s_n respectively. But there would be nothing in this huge disjunction to show whether any one set of conditions E_n is ever in fact fulfilled, or if so, when and where. The omniscient knower would be aware of a possibly infinite range of possibilities, but not of a single fact. All biographical and historical truth would be outside his ken. Nay even the truths of fact contained in Mathematical Physics or Astronomy would be hidden from him. He would know, *e.g.*, that if particles gravitate according to the law of the inverse square a certain state of the physical world must follow, but if they gravitate according to some other law the consequences will be different in such and such ways, but he could not tell according to what law particles do in fact gravitate. And I wonder very much why any one should think knowledge of this kind knowledge about "Reality" *par excellence* or call it omniscience. As Mr. Temple reminds us it was an outstanding problem of the schools *quomodo Deus sensibilia cognoscit*. But surely it is a crude solution to say that He knows nothing at all about them.

To turn from logic to psychology, I cannot agree with Mr. Temple's very strong assertion, in his chapter on *Intellect and Imagination* that imageless thinking is impossible. I am bound to say a word or two on the point because it seems to lead to an unfortunate confusion about the relations of Art to Science. Mr. Temple's view is that a thought has two aspects, it is a "meaning" and also a "mental image". Science concentrates its attention solely on the "meaning" and is thus a one-sided affair in need of completion and supplementation by Art, which is interested in the other aspect, the "image". This theory seems to me in need of reconsideration in three respects. (1) Is it a fact that there is no thought without "images" as its vehicles? I believe that, unless we take a very restricted view of "thought," the answer must be that there *is* imageless apprehension of meaning. When I read a sentence in *Mens Creatrix* and understand it, I should certainly say that I am exercising thought, but I see no reason to suppose that in such a case there need be any succession of "images" intervening between my sight of the non-mental black marks on the page and my understanding of their meaning. So with any case of exhibiting practical "presence of mind" by doing just the right thing in a critical situation. Here again we have thought, or intellect, since we know what we are going to do, but I feel sure that what we directly understand is the situation itself, not a series of "images". Again, I feel quite sure that we can contemplate our own mental activities by introspection, but what an "image" of a mental activity would be is more than

I can understand. (2) Hence I cannot see the necessity for the *kind* of supplementation of Science by Art of which Mr. Temple speaks in this chapter. Indeed, I do not see that it would be called for, even if all thinking *did* require mental imagery. Even if I could not think about Fabius Cunctator without having an "image" of him, still the object about which I think would be Fabius himself and not this "image," and therefore, though my knowledge of Fabius may be very imperfect, I do not see how the imperfection can be in any way due to my neglect of this "image" or could be "supplemented" by switching off my attention to the "image".

No one really knows better than Mr. Temple that in real fact the bricks with which Art builds are not "images" but sense-data, colours, shapes, tones, and the like, as his admirable tenth chapter proves. Then, when he has really got to the work of expounding a theory of Art, we hear no more of the unfortunate suggestion I am now criticising. (3) Finally, I cannot feel that Mr. Temple is quite happy in his account of the "unfinished" character of Science, which he contrasts with the completeness of a great work of Art. Of course, Science *is* always unfinished in the sense that no man ever knows all that there is to know, just as a work of Art is always unfinished in the sense that none is so perfect that it *might* not conceivably be bettered. But is this really a defect in the intellect, any more than it is a defect in a great picture that it is never complete while it is still a-painting? It is true that Science, which is analogous not to a picture on the walls of an Exhibition gallery, but to one still on the easel, looks as if it might go on endlessly asking for a *Why* beyond every Wherefore we have reached. But even now, as I have suggested, we do seem to come sometimes to principles for which we no longer seek a *Why* because we see their truth to be evident, and I conceive that Mr. Temple's omniscient divine intellect would apprehend all truths as dependent on such evident principles. Hence, as it seems to me, the contrast between Art and Science after all only comes to this, that, as Mr. Temple also says, Science deals only with universals, Art always aims at producing individual wholes. As no individual is really a mere complex of universals, both points of view are required to express life in its fullness, and both, alike, have their limitations. Art is not "above" Science nor yet "below" it, but simply different. Hence I feel some misgiving about the statement that "Art is the climax of the contemplative activity of mind; its product is generically superior to that of Science, for it is capable of embracing this with other aspects of reality in addition" (pp. 42-43). Is it so clear that Art is *the* climax, the shining head of the contemplative's Jacob's ladder? Do we ever reach the topmost rung while we are still rapt in the contemplation of the sensuous glories of a mutable world? Plato, in the *Symposium*, it will be remembered, makes the ascent *from* Art through Science to something which is better than both. And, of course, none of the goodly crowd of mystics would allow that Art is the highest form of θεωρία. In any case, is it not clear that Mr. Temple's claims for Art will not stand investigation? Art is *not* all that Science is and more. It is of the very nature of Art to be selective, to *refuse* to look at some things. The fate of the realistic novel, with its "documents" and scientific "authorities" and its inability to shut its eyes to the seamy side of things or its nostrils against the malodorous, is suggestive. Even the very "completeness" of the work of Art, on which Mr. Temple lays stress, is falsification. Art which is too much "like life" is bad. For the actual story of a human life is always full of the unfinished. Any novelist who allowed blind "chance" to have the importance in a story which it has in actual life would be at once condemned for incoherence or abuse of coincidence or both. In real life Lady Macbeth might have died of influenza and ensuing complications before her nerves began to break down, and Tom Jones would probably have been knocked on the head in a brawl without ever being reconciled to Allworthy, but Shakespeare and Fielding must not dispose of their characters so.

I pass to another point of the first importance, the relation of Time to Reality. I am absolutely in accord with Mr. Temple's rejection, in his chapter on *Knowledge, Truth and Reality*, of the view that pure Mathematics is the one and only type of Science, though I doubt if he is quite right in finding the differentia of Mathematics in the "timelessness" of its propositions. If this view were correct, I hardly see how there could be such a Science as pure Kinematics, since all the propositions of Kinematics involve as part of their meaning the notion of temporal succession.

The whole subject of the relation of Time to Truth seems to me hopelessly confused by Prof. Bosanquet's peculiar view about the "timelessness" of truth, which is repeated by Mr. Temple. Of course, in a sense, you can say "once true, always true," but this is really an empty tautology. It only means "what is true is true" and therefore at whatever moment a true proposition is thought its thinker is thinking truly. But the real difference is between propositions which are *about* the temporal and those which are not; and when logicians like Prof. Bosanquet infer from their "once true, always true," the portentous consequence that "what is *about* the temporal is not true," they are committing a very elementary fallacy.

Careful examination will show that we need to distinguish three classes of statements, (1) those which do not involve reference to time at all in their meaning, *e.g.*, "23 is a prime number"; (2) those which involve an assertion about *every* member of some *class* of moments (which may, of course, be the class of all the moments of time, or only of some of them or even a class containing only one moment); (3) those which make a direct assertion about an *individual* moment or a number of individual moments of time—*i.e.*, those which include a reference to a *date*. Mathematics, I suggest, contains propositions of classes (1) and (2) but none of class (3). *E.g.*, all the truths of Geometry are truths of class (1). They are *aeternae veritates* in the sense that no reference to time whatever enters into their meaning. Geometrical relations are wholly non-temporal. Kinematics or Dynamics, on the other hand, always refer in their propositions to time, but always to every member of some class of moments. The moments are specified as those forming such and such a class, but never directly denoted. The peculiarity of Mathematics is that it contains no proposition which directly asserts anything about *this* or *that* moment. All propositions, like those we meet with in history or biography, which make statements about actual *dates* belong to the third class. No ingenuity will enable you to replace a proposition of any one of these classes by a precisely equivalent proposition belonging to another. *E.g.*, you cannot without absurdity introduce a temporal reference of any kind into the enunciation of the Pythagorean theorem or the Binomial theorem. The law of gravity, on the other hand, and dynamical laws in general, belong to the second class. This is shown by the fact that in formulating them exactly you have to introduce a symbol for "the time," and that they become meaningless if the time-symbol is suppressed. Even where an explicit time-symbol does not occur, as, *e.g.*, in the formula for Boyle's Law, $pv = K$, the reference to time is implicit, since the meaning is that *at any moment* the product of the pressure into the volume is the same as at any other.

So we seem to be able to express the law of gravity in terms of mass and length only, but we discover that time is really implied as soon as we ask how the masses of particles are to be ascertained. Again, no statement involving an actual date can be expressed in the symbols of Kinematics or Dynamics. *E.g.*, "The battle of Trafalgar was fought on 21st October, 1805 A.D.". That means that the fight occurred at a certain distance in time from the moment we take as the beginning of the era of Our Lord. And we can only say when that era began by saying that it was 1917 years and so many odd months, weeks, etc., before *now*, and no symbol will represent *now*. Thus the whole theory that no proposition can be strictly true until it is made "timeless" rests on a thoroughly illogical attempt to disregard a fundamental distinction between the three types of proposition. There may be a sense in which it is true and important that the real is the eternal, but this is not true in the sense that a proposition which has reference to all times or some-times as part of its meaning is false, or requires to be completed or "transmuted" to make it quite the truth.

I have already anticipated most of what I might otherwise have had to say about the chapter on *Judgment* in which Mr. Temple follows Mr. Bradley and Prof. Bosanquet pretty closely, but I may call attention to a point or two. I cannot fully understand the importance which these philosophers attach to the assertion that "Reality" is the true logical subject of all propositions. I do not see how it adds in any way to the meaning of "Queen Anne is dead" to say "Reality is such that Queen Anne is dead". The prefatory "Reality is such that" seems to me to be as purely a formal piece of politeness to the κρείττονες, and as little significant as the qualifying (D.V.) which we sometimes see inserted in the announcement of a concert or a sale by auction. But the otherwise harmless formula becomes a source of positive mischief when it is treated as a ground for maintaining that you can never really know anything about anything unless you know everything about everything. Mr. Temple's own attempt to recommend this paradox by illustration seems to me to refute it. He imagines an inquirer who is trying to understand the statement that X's character was permanently influenced by the tone of his Public School. The questioner finds that he is committed to an inquiry into the Public School system which leads him back through English history and general European history to geology and astronomy and finally lands him in the nebular hypothesis. (Mr. Temple leaves him at this point; perhaps he does not know that the primitive nebula seems, in the opinion of some eminent astronomers, to have been a little blown upon, or he would have taken his unhappy inquirer even further afield.) Surely, however, most of the information Mr. Temple's inquirer would gain by his enormous survey of the sciences would be wholly irrelevant to his special purposes. A father does not in fact require to be a geologist and astronomer in order to decide whether Eton or Rugby will be the best school for his son. Most English and European history has no special bearing on the question what the tone of our Public Schools is, and geology and astronomy, so far as I can see, have none. Mr. Temple forgets, among other things, that it is not even certain that the prosecution of astronomical research would end in establishing any one hypothesis about the formation of the solar system. It might lead to the conclusion that several different theories are equally compatible with the known facts. At any rate I should suppose any number of rival cosmological hypotheses might yield identical results so far as you only considered those which are relevant to the problem about the Public Schools.

I do not deny that in the end "all things may be in each" in the sense that a difference in any one may make some difference to every other. But I do deny that there is any ground for believing that any difference in anything must lead to differences in all others which are relevant to a given inquiry. The world may be a unity in some sense; it does not follow that it must be a unity in *this* sense, and no one is entitled to take so tremendous a doctrine for granted. It is the task of philosophy to *find out*, if it can, in what sense all things are one. Mr. Temple even goes so far as to say (p. 57) that I do not really know what "this is red" means unless I know "all about red," and that to know that I must know the complete list of red things. Would he admit that since I do not know who the authors of all books are (*e.g.*, who was the author of *Junius* or the book of *Wisdom*), I do not really know that Mr. Temple is the author of *Mens Creatrix* or Browning of the many poems quoted in that work as his? Such portentous consequences cannot be established by simply insisting that "Truth is a system". A family is also a system with a special unity of its own. But it does not follow, *e.g.*, that I cannot know the postal address of one member without knowing the addresses, dates of birth, political opinions and the like of his parents and all his brothers and sisters. The University of Oxford is a system, but I can be on the books of one College without being on the books of all. A pack of cards is a system, but if I am taking part in a game of whist I can know exactly what cards are in my own hand without knowing exactly who has the others, as actual play often reminds us by its disagreeable surprises. Mr. Temple himself, if he plays at all, has probably had in his time the experience of being trumped in the first round of his best suit.

With the remaining chapters of the section on knowledge which lead up, through a discussion of Individuality, to the conception of Value, I am glad to find myself in much more substantial accord, though there are many incidental remarks scattered through them which strike me as strange. *E.g.* it is odd to find in a generally excellent discussion of "external relations" the false statement that "the weight of a book in its place on the shelf is the same as its weight in my hand" (p. 75) or to be told (p. 83) that the principle of the distinction between "primary" and "secondary" qualities in Locke is that the former are "identica for all intelligences," while the others "vary from one person t another". Shape was one of Locke's "primary" qualities and n two men can possibly perceive the shape of a thing alike, as eacl sees it in a different perspective. And on the other side the fact of colour-blindness is not *of itself* enough to prove that the same surface is really red (for me) and gray (for you). It might be that it is really simply red, but that it requires an adequately constituted retina to discern its true colour. Such a theory cannot at any rate be simply dismissed without argument. And it is clear that Mr. Temple falls into an inconsistency when he goes on to say that the variable secondary qualities are "products" of the "mathematically determinable" and "constant" primaries. A product of determinate factors should itself be determinate. Also there is a confusion in the words "identical for all intelligences". A colour-blind man, let us say, cannot *see* any difference between the colour of the grass in his garden and that of the bricks of his garden-wall. But there is nothing to prevent his *intelligence* from believing in the reality of a difference which he cannot see. The true basis of the distinction seems to me to be rather that the primary qualities are those in virtue of which inorganic bodies interact with one another, the secondary those in virtue of which they only act upon organisms. This is why the "secondaries" can be disregarded in Physics or Chemistry, but become important in Biology. Two stones, to put it metaphorically, are not interested in each other's colours, but an insect is keenly interested in the colour of a flower. The point of vital interest raised at this stage of the argument is that by which a transition to the discussion of Art is effected. The mention of the secondary qualities leads Mr. Temple to dwell on their aesthetic value. As against Dr. G. E. Moore he holds very strongly that though value is a quality of the object appreciated, it is created (partially and perhaps wholly) by the appreciating mind. He even says in so many words of the beautiful object "its value begins when it is appreciated" (p. 84). Now if this is true, since appreciations of value are eminently individual, it follows that no *one* mind can appreciate all the values of things, the more that "some of the elements are intrinsically incompatible". Thus if all values are to be appreciated, and I gather that Mr. Temple means that they *must* all be appreciated because otherwise they would not all exist (and they do exist), there must be a society of spiritual individuals to appreciate them, in fact there must be "the Communion of Saints". Since the existence of this society is enough to provide for the appreciation of all values, Science cannot go behind it and the intellect "*working only upon the principles of its own procedure* will never lead to the Transcendent God of Religion" (p. 86). But (p. 88) "as the Universe comes to focus" in individuals, it realises its own value. And the value of this "unity of all values" cannot be grasped by any member of the Universe. Ergo if we are led on other grounds than those of Science, to believe in a Transcendent Divine Mind which is adequate to appreciate the value of the unity of all values, Science may welcome this belief as a natural culmination of its own edifice. And it is hinted that the "other grounds" may be discovered from a consideration of Art. It is a sufficient ground for the creation of the actual (*e.g.*, for the painting of a picture on canvas) that the artist discerned that the picture would, being beautiful, add to the stock of existing value. Art thus appears as the link between thought and creation, and we are offered as the final deliverance from the restless quest for causes behind causes the conception that the World has been created by a transcendent will for the sake of the values it contains (pp. 88-90). At least this is how I understand Mr. Temple to be reasoning, and, if I have understood it correctly, the only criticism I should be inclined to pass upon it would be that it is perhaps a little unfair to Science. As the argument stands, Mr. Temple seems at first sight to be pleading for the recognition of a Divine Mind which apprehends *all* values on the curious ground that *no* mind can apprehend them all. Of course the apparent illogicality can be easily removed if we recognise the fundamental differences between a divine and a human mind. But might not recognition of this difference remove at the same time the imperfection which Mr. Temple declares to infect all Science? May not the conception of a completed Science lead (as Kant thought), to the "regulative Idea" of God directly and not by the round-about path through the consideration of Art and the way in which Art "supplements" the alleged imperfections of Science? With Mr. Temple's account of the experience of aesthetic enjoyment, and his insistence on the value of the "eternal moment" I am so wholly in sympathy that I can do little more than thank him for his admirable statement, a statement, to my mind, far superior to the confused utterances of M. Croce upon which he modestly professes to base it. It is only here and there, in quite minor matters, that I find it difficult to follow him. I feel sure, for example, that he is wrong in saying of the "eternal moment" of contemplation that it is "timeless". He cannot really mean that we are not conscious of before and after in our experience when we listen, *e.g.*, with understanding and delight to a fine performance of a Beethoven symphony; he must mean no more than that in this necessarily successive experience, the before and the after are before and after within what comes to us as one present. The experience as a whole is *one* experience though it is the experience of the successive. We *feel* the later phases of a movement presaged in and growing out of the earlier. But to say that the experience has "no duration" is to open the way for a complete misconception of the relation of the temporal to the eternal. Nor again do I think Mr. Temple altogether justified in the ingenious reasons he discovers for approving of the Greek tragedians for adopting "well-known tales" as the basis of their tragedies. Were the tales always well-known? Aristotle, who ought to know, says they often were not, and it is not on the face of it a plausible theory that an Athenian audience was, *e.g.*, already familiar with the local legends of Pherae when it assembled to see the *Alcestis*. It may be an accident, but so far as I know, the only reference to the tales about Admetus in extant Greek literature before the date of Euripides' play, is Pindar's passing allusion to the hospitality of Admetus as proverbial. Also, as Mr. Temple has occasion to illustrate his theories by a long quotation from *The Cloud* it might have been well—as a corrective to exaggerated views about the antithesis between Art and Science—to point out that in the very finest stanzas of the poem the material out of which Shelley is building up his lyric is not immediate sense-perceptions but a scientific theory of the formation of clouds.

Equally, if not more, admirable is the discussion of the meaning and value of the tragical element in life,—if only Mr. Temple could have kept clear of the disturbing influence of Hegel's arbitrary dictum about the "conflict of rights" as necessary for a tragic situation. I am sure from the excellence of most of the chapter on tragedy that Mr. Temple really appreciates great drama much better than Hegel did, and I should prefer to hear him speaking only with his own untutored voice. No impartial student of

Sophocles can well acquiesce in the revolting view, which he repeats after the German, that the poet meant Creon in the *Antigone* to be expounding a duty against which Antigone has sinned. Sophocles not only guards himself against such misinterpretation by insisting on the divine authority of the "unwritten law" to which Antigone sacrifices her life, but goes out of his way to make his meaning the plainer by giving Creon all the qualities which were supposed to be typical of the tyrant. And where, we may ask, is the "divided right" in such plays as—*pace* Mr. Temple, *King Oedipus*, *Philoctetes*, *Hecuba*, *Hippolytus*, *The Women of Troy*, and in fact most of the most famous of the Athenian tragedies? Mr. Temple finds it in the Orestean trilogy, but only by misreading into Aeschylus an anthropological intention which is the invention, and the demonstrably mistaken invention, not of the poet but of Prof. Ridgeway. He even allows himself to misunderstand Shakespeare in order to find the "divided right" in *Macbeth* and *King Lear* and *Othello*. It pains me to see a man who can, when he chooses, write so well of great literature as Mr. Temple, falling into the blunders of calling Othello "jealous," arguing that the agonising end of *Lear* is a retribution for the sins of Cordelia and talking nonsense about the legitimate ambition of Macbeth. Othello's error was not the mean vice of jealousy; it was rather that he aimed at being God's justicer without God's omniscience; as for *Lear*, surely it is obvious that the main *motif* of the tragedy is not "divided right" but the everlasting thanklessness of the younger generation. The true motto for the play is simply "I have brought up children and they have rebelled against me". So far as Cordelia has to be put in the wrong to make her fate tolerable, her fault is not, as Tolstoy and Mr. Temple would have us believe, that she would not fawn like her sisters, but that in her devotion to her father she brought the "plumed slayer" into the land, and even of that Shakespeare does not seem to intend us to think more than once and in passing. Similarly in the *Hecuba* and *Women of Troy* it is plain that Euripides means to leave us with a profound sense of the cruelty and above all the stupidity of conquerors. He does not intend to send us away saying "But, after all, these Trojans had received and entertained an eloping wife". That is why in the *Hecuba* it is a capital point to exhibit the generalissimo of the conquering army, at the very moment of its triumph, as a poor creature who means not unkindly but is all the while so much the mere puppet of the armed mob he is supposed to command that everything he does only leads to horrors which are personally distressing to him and above all merely futile, mere acts of "war-frightfulness". We should go not to the *a priori* speculations of a metaphysician who does not seem to have had any special qualifications to act as an exponent of Art, but to the works of the great artists themselves to find out what tragedy is. If we do this, I think we shall not be long in discovering that the clash of "rights" is not the only feature in human life which the great dramatists find tragic. "I opened the sea before thee, and thou hast opened my side with a spear; I went before thee in a column of cloud, and thou hast led me to Pilate's judgment-seat; I fed thee with manna in the desert, and thou hast smitten me with buffetings and scourgings." There is surely the essence of tragedy, but where is the divided right? Mr. Temple thinks *Hamlet*, by comparison with the other great Shakespearian tragedies, almost a prentice effort because, as he rightly sees, Hegel's formula will not readily apply to it. This is at any rate an improvement on the monstrous interpretation which finds in the ruffianism of Laertes an indication of what Hamlet should have done and suffers for not doing. But the mere fact that one is driven to such a device if one really means to defend Hegel's dictum suggests that the fault does not lie so much with Shakespeare's play as with Hegel's theory.

Considerations of space compel me now to proceed, though I feel I have still much to say in behalf of that same Shakespeare, to Mr. Temple's treatment of the moral life (Bk. I., Pt. III., *Conduct*). I need hardly say that I am wholly in agreement, as I imagine most readers must be, with the general account, so admirably given in the chapter on *Will and Purpose* of the formation of character out of the raw material of native endowment and dispositions, a piece of analysis which shows to what good purpose Mr. Temple has sat at the feet of Plato and Aristotle. In particular I am delighted with his strictures on the folly and criminality of much of the current nonsense about eliminating every element of discipline in enforced attention from the education of children. That it is doing a very bad service to a child to abolish the difference between "lessons" and "play" for him ought to be obvious to the average intelligence. Unfortunately it is apparently not obvious, and so we get the educational tragedy of our American cousins, who spend more on education than any nation in the world, with the result that the average American is perhaps the most crassly ignorant of all civilised men, and that even the academic class are behind their *confrères* elsewhere in the great characteristic of a real education, knowing when you do *not* know a subject. Nor do I think it easy to put a fundamental point in moral philosophy better than Mr. Temple puts it when he says (p. 174) that "the more complete our Personality, so much the more will the Future preponderate over the Past in our interest". Yet even here Mr. Temple cannot resist the temptation to exhibit touches of philosophical sectarianism. He must have his fling at the harmless use of the word "faculties" in Psychology, though no psychologist can escape the employment of some synonymous term, and the "faculty psychologist" of our Hegelian writers is a mere man of straw of their own invention. Or again he must declare that it is "vital to the significance" of *Macbeth* that the hero does not know that "the murder of Duncan will be the death of his own soul". Yet I seem to remember some weighty remarks about "the deep damnation of his taking-off," and the "judgment here" that must be faced even by one who is prepared to "jump the world to come"; but I should have thought that the most tragic thing in human existence is the fact that a soul which has had life and death set plainly before it *can* and does choose death with open eyes. If a moralist denies this, is he not still at heart a victim of the Determinist fallacy?

With the chapter on *Good and Moral Good* we find ourselves in the very thick of a controversy which is to my own mind of supreme importance. For Mr. Temple, like all Anglo-Hegelians, is anxious to exalt the "State" at the cost of the individual, and follows the usual line of insisting that all obligation is social obligation. All "duty" is "duty to our fellow-men," and there are no duties to ourselves which are not duties to some determinate person or persons other than ourselves. Mr. Temple is unusually emphatic on this point. If there were only one conscious being in existence, he says, that being would be under no obligations at all. We only use the phrase "you owe it to yourself" when "a man has earned some reward which he is foregoing—and then we do not regard it as his duty to take it, but only as a right the waiving of which is morally admirable rather than evil" (p. 181). Or else, as when we say that a jaded man owes it to himself to take a holiday, we mean that he should do so with a view to producing better work afterwards, and to do that is primarily a duty to society. "Duty is a term never applied strictly to the isolated individual" (p. 182). "The Atheistic Debauchee upon a Desert Island is not liable to moral censure" (*ibid.*).

Now some of these assertions seem to me obviously false, and others irrelevant to the issue, and as I hold the question to be one of first-rate practical importance, I may perhaps be allowed to set out my grounds for dissatisfaction in some detail.

To begin with, I think the atheistic Robinson Crusoe, who has figured before in Hegelianising works on morals, may be dismissed. In the first place, Mr. Temple, of course, holds that this atheist is believing falsely in thinking that there is no God. Does he mean then that Robinson Crusoe is discharged from the obligation not to drink himself to death on his rum, and that the *iustus iudex ultionis* will hold him guiltless because he falsely thinks that there is no God? If he does, he is making the tremendous assumption that a man can discharge himself from his obligations—and surely if there is a God in whose image Crusoe is made, he owes it to this God not to defile that image—by merely refusing or failing to recognise them, and I would refer him to Mr. Bradley's criticisms of J. S. Mill for a trenchant assault on the morality of his doctrine. Or does he only mean that if the atheistic Crusoe were right in being an atheist (as he is not), he would be under no moral obligations? If this is, as I presume it is, Mr. Temple's meaning, I would urge the considerations (1) that the method of "false hypothesis" in Ethics, as elsewhere, is at least no infallible guide to true conclusions. It is a strange assumption that we can reach true conclusions about what is real by simply deducing results from what we know, or think we know, to be false. Of course, according to Christian belief, if God did not exist, Crusoe would not exist either, and a non-existent Crusoe has no obligations. But this does not show that the Crusoe who does exist on his island has none. (2) Mr. Temple himself asserts that his isolated atheist may be "wise or foolish". That is, he may believe truly or he may believe falsely. Then why may he not equally act rightly or act wrongly, especially as some of his beliefs may be beliefs about right and wrong? *E.g.*, the atheistic Crusoe believes "The best course for me is to drink myself to death," and apparently Mr. Temple would grant that this may be a false belief. Then why, if Crusoe acts upon it, are we forbidden to call his acts wrong? It seems very arbitrary to hold that one does not get rid of the difference between truth and falsehood by being stranded on a desert island, but does get rid of the distinction between right and wrong. If Mr. Temple would try to assign a reason for making this distinction I think he would find that his reason would turn out to be that all duties are duties to some one other than the agent, and then his *argument* is no more than a *petitio principii*.

The plea of this intruding atheistic Crusoe to be made a party to the suit being now dismissed, we may proceed to consider Mr. Temple's case on its merits. He has really two arguments, one which bears directly on the issue, and a second which is offered in rebuttal of a possible rejoinder. The one real argument is that it is only by life as members of a community that we learn to recognise obligations. This is true, and as against any one foolish enough to suggest that society has nothing to do with the moral life would be an adequate retort. But what persons like myself deny is not that society is an indispensable instrument for the acquisition of moral personality. We deny that all the obligations recognised in an adequate morality are obligations *to* "society" or to members of it other than ourselves. Against us, the eloquence displayed by Hegelian moralists when they dwell on social education as the great instrument in moralising the individual is simply irrelevant. What you have to establish against us is that those who moulded our character in our early years never inculcated duties to self as equally important with duty to others. And this brings me to Mr. Temple's argument in rebuttal. To it my reply is that he has simply given a false account of the facts.

It is simply not true to say that when we speak of duties owed to ourselves we mean either "rewards" which it is on the whole more admirable to decline or else duties which are primarily *not* duties to ourselves. *E.g.*, if I say that even Crusoe on his island owed it to himself—and I think most moralists would say this—not to "make a hog of himself," and that even the "atheist" is capable of seeing this to be true, I do not mean that "being a hog" is a "reward" which Crusoe does well to refuse, nor yet that it is his duty to "society" not to be a "hog," since the hypothesis assumes that Crusoe is not, so far as I know, to escape from that island, and it will not matter to "society" what he does there. Mr. Temple is apparently intending to meet this reply when he throws out the suggestion that this duty may be owed to God and that God and Crusoe are a society of two. But *why* should Crusoe be supposed to owe the duty of decency to God? Surely not on the ground, so fatal to all real morality, that decency is an arbitrary command of God, but on the ground that what God wills—*i.e.*, that Crusoe shall behave like a decent man—is intrinsically good. And in that case it is Crusoe's duty to aim at this good irrespective of any question whether any one but himself will be the better for his doing so. Whether Mr. Temple recognises it or not, that is what I, for instance, mean when I say that Crusoe owes the duty to himself, and I cannot see that any of Mr. Temple's arguments affect my position. And the difference between us is no disagreement in mere theory. Mr. Temple, like the majority of the school with which he has so much sympathy, is led by his arbitrary refusal to admit any but "social duties" to laying down the practical rule that one should "make the world a better place, even if you have to do dirty work in the process" (p. 193). The context shows that the "dirty work" means what one knows to be sin. The counsel is to make the world better by doing known wrong. (Mr. Temple does not even contend that in certain cases what would be "dirty work" in most situations ceases to be "dirty" if you take the whole situation into account, like destroying a beautiful building as a necessity in a righteous war.) This was the advice given by that eminent divine Satan to Our Lord, and comes badly from a professed Christian theologian. Do we ever make the world "better" by stooping to deliberate moral degradation? Let me suppose an example of a kind discussed by casuists and by no means unknown in actual life. A decent Christian wife has to choose between making herself a partner in the lewd pleasures of her husband and breaking up the family life. If a woman placed in this distressing dilemma applied to Mr. Temple, as an authorised minister of the Church, for direction, is he sure that he would be doing right in giving the advice indicated by the formula I have quoted? Is he sure, even, that the formula does not amount to denying that "moral good" is intrinsically good at all, and that he is not tacitly thinking of "making the world *better*" in a purely non-moral sense of the word "better"? To any one who holds that *some* habitual states of will and temper are either the most valuable or among the most valuable of intrinsic goods it is impossible to think in this light fashion of bettering the world by degrading one's own character. I have not much sympathy with the attitude of even the most honest of our present "conscientious objectors," because I think their "consciences" curiously unenlightened, but the temper displayed towards the little minority in this matter by the Northcliffe newspapers and the ignorant crowd who take their opinions from my Lord Northcliffe and his puppets leads me to think with Lord Hugh Cecil that society, at the present moment, needs no warning against over-conscientiousness, but rather the reverse. We are in serious danger of relapsing into the mob persecution and possibly the legal persecution of minorities who refuse to regard the commands of a legislature which is rapidly sinking into the condition of a mere board for registering the decrees of a ring of unscrupulous financiers and press-men, as the ultimate authority in morals, and a moral philosophy like Mr. Temple's is only helping to bring the danger nearer. (Perhaps I should explain that I am referring not to the proposal to disfranchise the "C.O.," which seems to me defensible and reasonable as a measure taken in the interests of national security, but to the attempts of the newspapers to which I have referred to arouse the spirit of intolerance by representing *every* "objector" as a hypocritical coward, and the hardly-veiled incitements in some quarters to downright mob-violence.) While actual "society" remains in matters of conduct what it too often shows itself to be, a mere blustering bully, it is good for society itself that some persons should refuse to fall down and worship.

We are on less debatable ground in the discussion of the moral criterion (c. 16). Though even here I feel that Mr. Temple is scarcely sufficiently careful to safeguard some of his views by necessary restrictions. *E.g.*, he seems to hold that an ideally good man is one who is "capable of happiness only in so far as he is conferring it" (p. 205). No doubt it is true that the better a man is the more does he find happiness in conferring it. But can it really be held that the best man is only capable of feeling happy when he is making some one else happy? Would Mr. Temple regard as ideally good a man who got no happiness from the reading of Plato or Browning (unless he were reading them to some one else)? Or would he deny—I should not deny it myself—that a good man might feel happy in performing an unpopular act of justice which made no one else much the happier and many men unhappier? Or again, is it really true that "to understand, when used of other human beings *always* means to "sympathise" (p. 206)? I do not think that to "understand" an Iago would mean "to sympathise". I think the clearer our understanding of such a man, the less would be our "sympathy". Is it not proverbial that hate can show as deep an insight as love?

A more serious criticism, affecting the whole chapter, is that though Mr. Temple has said many true and striking things in it about differences of moral standard, he does not seem to offer any satisfactory answer to the question he is supposed to be discussing. He does not give us a satisfactory mark by which right acts can be distinguished from wrong ones. In my own opinion no "criterion" in this sense is possible for the simple reason that there seems to be nothing which is a universal and exclusive characteristic of right acts other than their rightness itself. To ask for some mark, other than their rightness, by which you may recognise right acts whenever you meet them is like asking for some mark, other than truth, by which you may be sure of recognising a true proposition. Mr. Temple merely falls back on the theory that all duties are social, and observes that we may thus make social utility a criterion. What is necessary to the existence of any and every society is a duty for every man; what serves the society of which I am a member is a duty for me (p. 211).

I do not feel that this utterance helps us very much. What is "*the* society of which I am a member?" Mr. Temple says that for an Englishman it is "England". But suppose the interests of England are not wholly identical with those of the United Kingdom, or of the British Dominions, or of civilised humanity? And who is to judge when there really is such a conflict of interests? Or again, if I am a Christian as well as an Englishman, is *the* society to which I must be loyal at all costs "England" or the Catholic Church (however I understand that designation)? Or is a Socialist's first duty to his country or to the *Internationale?* These are real and urgent practical questions, and it is specially imperative on moralists who preach loyalty to my "society" as the whole of duty to answer them. Even if all duty is a matter of giving to Caesar that which is Caesar's, who is *my* Caesar? Mr. Temple declares for rebellion if necessary when the institutions of a social group militate against the good of its own members,—but what of the case where they seem to militate against the good of other social groups? Newman once wrote that it would be better that the whole human race should expire in the most exquisite torments than that one soul should commit one wilful sin. I do not ask here whether Mr. Temple would subscribe to this doctrine, but surely the fact that it can be and is held shows that Mr. Temple's criterion would not in practice assist us much in making really difficult moral decisions.

In the following chapter on *Liberty* Mr. Temple gives an excellent description of the true Liberty which does not mean absence of Law but Life regulated by a Law which expresses the true and abiding will of the good citizen as contrasted with his passing impulses. Yet I think he is hampered in saying what he really means by an undue deference to "democratic" prejudice. He is really evading what to the "democratic" man seems a serious difficulty when he more than once insists that it is of the essence of a law to be a rule which its makers have agreed to lay down beforehand for the regulation of the conduct of each of them. The "democratic" man—or very often it is the "democratic" woman—will retort that the makers of laws insist on treating them as rules laid down to direct not only their *own* future conduct, but that of the millions who have never been consulted at all, and the more numerous millions of their descendants. I do not think anything is gained in Ethics by clinging to some last remnant of the old fiction that law owes its claim to respect to unanimous consent. A bad law might be carried without a dissentient voice, and I do not think any respectable moralist likely to approve of the position of some of our wild women, that they are not bound, *e.g.*, by the laws against arson, because their consent was never asked to them. A law is binding in the last resort because what it commands is right, what it condemns wrong, and acts are not made right or wrong by winning or failing to win the suffrages of the "many". It would have been better to dwell, with Prof. Bosanquet, on the thought that the real purpose of laws is direction, not coercion, without introducing the "democratic" fiction. After all, there is no inherent sanctity about the "compact majority". Democracy is only one among other forms of government, and it cannot be said to be proved that it is the best form. If we think it is, we can only justify our opinion by urging that the heart of the "plain man" is more likely to be in the right place than that of any specially selected "superior" class. Even this is an unproved assumption, and if it is granted, it still remains a further question how far the head of the plain man can be trusted to devise legislation which corresponds in its working to the desires of his excellent heart.

I find it curious, too, that Mr. Temple should offer such a remedy as he does for disaffection to the Law on the part of a section of the public which believes itself to have been wronged in the past. He suggests that the oppressor shall make things right by voluntarily allowing the oppressed to oppress him in turn. Thus he actually proposes to reconcile the recalcitrant Irishman who cannot forget the old financial wrongs of his people by allowing the Irish in the future to tax the English at their pleasure without having to render any account. I cannot believe that one wrong can be made to remedy another in this easy manner. In the particular instance chosen by Mr. Temple, not only would you create an English ill-will towards Ireland in addition to the old Irish ill-will to England, you would also do the Irishman no service by teaching him to be the one thing that is worse than a slave,—a slave-driver. If Mr. Temple were not so obviously in earnest, I should have fancied he had evolved this theory out of the cynical saying that what a slave wants more than anything in the world is not to be free but to have a slave of his own. So I think the remarks about Capital and Labour on page 222 imply a hasty adoption of Syndicalist errors which would be certain to be disavowed by the most responsible and serious champions of the Labour movement itself. But I am glad to see on page 225 an explicit recognition of duties which "transcend all earthly loyalties," though I find it hard to reconcile the recognition with the declarations of the chapter on *Good and Moral Good*. In the later chapter Mr. Temple says, and says well, exactly what seems to me the right thing about the "conscientious" law-breaker. You must, if after careful and modest search for moral truth you are personally convinced that obedience would be sin, break the law, but you cannot claim to be exempted from the penalties which the State, in the exercise of its conscience, enjoins for the breach. Martyrdom, as Johnson said, is the only test, and even martyrdom is a fallible one, since error has its martyrs as well as truth.

As one would expect, Mr. Temple's chapter on Education contains not only an admirable exposition of those fine ideals which were really implied in the old phrase, so distasteful to our "hustling" age about the education of a scholar and a gentleman, but also a goodly number of very interesting practical suggestions which I commend to all those who are in any way concerned with teaching, especially teaching in secondary schools. Whether all these suggestions approve themselves equally to all or not, Mr. Temple has at least succeeded in this chapter in discussing the elementary practical problems of the modern educator in direct connexion with the great spiritual ideal of the earlier books of the *Republic.* I commend particularly his very interesting remarks about the degree to which the "Public School" system of England embodies Plato's conceptions and the reasons why it falls short just where it does. In passing I must, however, utter a word of protest against the accusation that "we—*sc.* the English—have as a nation practically no regard for Truth," and that in this we must seek the source of all our mistakes about educational matters. The context shows that Mr. Temple only means that many Englishmen believe false propositions because they are biassed in favour of views held by their own class, or are almost inevitably ignorant of facts about the life and aspirations of classes other than their own.

I take it that this is a simple case of *humanum est errare*, and I would respectfully urge on Mr. Temple that it is also a case of *de te fabula.* Mr. Temple has in this very volume affirmed very confidently propositions about logic which I feel sure are false, and I think the reason why he seems to have affirmed them so confidently is just that he has taken them on trust and without examination because they are "prejudices" or "commonplaces" of a social group of Oxford tutors. But I should not feel justified in charging him on this ground with having "practically no regard for Truth," and I would entreat him to be a little less inconsiderate in the charges he brings against his fellow-sinners. If one may without being offensive recommend a divine to consult his own Scriptures, I would remind Mr. Temple of the moral of the parable of the two debtors.

The first book reaches its climax, of course, with the section devoted to Religion, a section almost wholly given up to the consideration of the Problem of Evil. If God—*i.e.*, the absolutely perfect Being—exists, and if we can enter into direct relation with Him, then the ideals alike of Truth, Beauty, and Goodness are not merely real, but more real than anything else, and we can become ourselves more and more full, in Plato's phrase, of "Being and Reality," as we come into closer and more constant relation with the All-wise, All-beautiful, and All-good. But does God exist? There is the plain and palpable fact that evil is intensely real as a feature both of our inner life and of the life of Nature. As Plato says, in the actual world there are "disorderly" as well as "orderly" motions. Here, as Mr. Temple holds, and I think rightly, is *the* problem of a "philosophy of Religion". If the All-good is more than a dream, how can evil be the enormously "live" thing we know it to be? The question, as Mr. Temple says, is no mere question of origins. The real trouble is not that we cannot say where evil came from, if there is a God, but that we find it so hard to say "what the good of" the existence of evil can be, and thus the undeniable reality of Evil seems to forbid us to hope for any teleological vindication of the actual.

The chapter in which Mr. Temple deals with this difficulty seems to me perhaps the very best in his volume. So far as moral evil is concerned, the question is of course Man Friday's old difficulty, "Why God not kill the Devil?" and I fully agree, as against what seems to me the superficial objection of Dr. McTaggart, with Mr. Temple's rejoinder that the victory of good over evil is itself at least one of the greatest goods, and that *this* good would be impossible in a world where there was no evil to be overcome. I agree also with him in his inability to follow the Dean of Carlisle by falling back on the notion of a "finite Deity," if the phrase really means anything. For a "finite Deity" may be after all not so much more powerful than ourselves, and His and our determination to triumph over evil may, for all we know, be doomed to pitiable failure. It is not to a "finite" God that we could trust for "grace to help in time of need," since we could never tell whether our own present need might not be the critical moment in which, so to say, the bank of Heaven was at last called on to meet a liability greater than its assets. If we are to have a religion which will really work, we shall need to make an act of faith, and the faith must be adequate to all emergencies. I think it is a pity that Mr. Temple should have thought it necessary to his argument at this point to entangle himself in the question about the endlessness of the temporal series. He pronounces himself on the side of the view that the overcoming of evil by good must be regarded as a process which is always going on, never began and never will end. As he rightly says there is no internal absurdity in the notion of such a series, unterminated in both directions, nor would it be a mere monotonous repetition of the *status quo*, since we may hold that "in every epoch the struggle is at a higher level than before".

But it is equally true that there is no absurdity in the view that an infinite series has a first or a last term or both. Thus, *e.g.*, the series of rational fractions not greater than 1 has no first term, but has a last, *viz.*, 1/1, the series of such fractions not less than 1/3 has a first term but not a last, the series of rational fractions not less than 1/3 and not greater than 1 has both a first and a last term, though all these are infinite series. As to the series of successive moments of time, I do not see that we have any grounds in philosophy for either asserting or denying that it has a first (or last) term. Mr. Temple is certainly wrong in saying that to think of the world as having a beginning implies a belief in a preceding "empty time"; it only implies a belief in a first moment of time. Hence I see no difficulty in believing that the historical order has emerged—as most Christians believe—from the supra-temporal and will return again to the supra-temporal. Mr. Temple might at any rate consider the worth of the arguments by which Varisco has tried to show that Theism *necessarily* carries with it the belief in a first moment.

Nor should I have thought Mr. Temple called on to deal seriously with what strikes me as the frivolous objection of Mr. Joachim to the belief in Divine omniscience. I gather that Mr. Temple is not quite satisfied with his own treatment of this "difficulty". I think he might have disposed of it very simply by denying Mr. Joachim's assumption that a mind can only know what it experiences. He might surely have said that God can know about my false beliefs without Himself believing falsehoods, just as I can know that Mr. Joachim believes a thing without believing it myself. This is, at any rate, the general line followed by the great Scholastics in their discussion of the problem, and it seems to me as rational as it is obvious. Apart from one or two paragraphs where Mr. Temple seems to me to stray off the subject for the mere pleasure of introducing certain favourite logical theories, his whole treatment of the place of moral and physical evil in the world strikes me as masterly. It is simply true, as he says that "love requires beings whom it may love, and requires their varying forms of evil for the perfecting of love. . . . Yet the victory is not that of force but of tenderness" (p. 290).

With the culmination of the discussion of evil in the formulation of this doctrine the strictly philosophical part of Mr. Temple's book comes to a conclusion. In what remains (Bk. II., *God's Act*) we are concerned with the historical and theological significance of Jesus Christ as the personal author and founder of a Church based on the principle of the conquest of evil by loving wisdom, and the advent of Christianity just at the time when Hebrew piety, Greek wisdom, and Roman political sagacity had made the world ripe for His appearance. In the comparatively few pages devoted to the account of this *Praeparatio evangelica* we are of course on familiar ground, and I would make no remark upon them except that Mr. Temple's account occasionally takes for granted points of detail which may reasonably be regarded as open to controversy. Thus it may fairly be doubted, in view of much Old Testament narrative, whether the God of Sinai was really regarded until a very late date as a deity to be worshipped "in complete detachment from all licentious rites". Mr. Temple should re-read the story of the way in which the worship at Shiloh was conducted by the sons of Eli and ponder on what Prof. Kennett has written in his article *Israel* (Hastings' *Encyclopædia of Religion and Ethics*) about the *q'dēshīm*, who are said to have existed in the Temple worship of Jerusalem down to the time of Josiah. It might also be doubted whether the notion of the God of Israel as bound to his people by a covenant is not a much later thing than Mr. Temple assumes, and whether on its first emergence this idea involved any notion of the connexion between God and people as based on "moral" relations. And again, does the Alexandrian blend of Mosaic Law with Platonised Stoicism contain any "Messianic" factor, as is taken for granted on page 310? These are, however, at the most very minor blemishes. I do not propose in the pages of MIND to enter upon an elaborate discussion of the chapters in which Mr. Temple expounds his own views of the living meaning of the main doctrines of Christianity. MIND is hardly the appropriate place for such a discussion even if I were not as well aware as I am that my own qualifications for conducting it are so slight. I can only express my own warm personal sympathy with Mr. Temple's general position and my own appreciation of the skill with which he expounds it. I may be allowed to say how much pleasure it gives me that Mr. Temple will not hear of an "attenuated Christianity" which has lost its hold of the historical and converts Christ and the Church into mere "ideas". I am quite of one mind with him in the view that the value of Christianity to mankind depends on the truth of the conviction that the perfect union of Divinity and Humanity has taken place as a fact of history, and in the person of Jesus the Son of Mary, not in that *e.g.* of Plato or Augustus or Alexander. Any wavering on this fundamental point means the abandonment of the specifically Christian conception of God, the conception which allows you to say *Christi est, ergo Dei est.* The mere fact that Hegel, for instance, could fancy that he was expressing what Christians believe about their Master by saying that the fundamental fact about the Church is its belief that the union of God and Man had been achieved in a certain historical person, is enough to show that Hegel was no Christian, nor a colourable imitation of one. From the point of view of real Christianity the really important questions are just those which Hegel ignores, what manner of man was this "historical person," and was what His followers believed about Him true? Did He really conquer the "last enemy" or was He only supposed by credulous peasants to have done so? There is so much "liberal Christianity" in our own days which is "liberal" without being Christian that Mr. Temple's explicit repudiation of it is peculiarly seasonable. I hope it will not be taken as any derogation from my admiration of Mr. Temple that I am forced to wish he had not used some of the language he has allowed himself on page 315. It is a very timely thing to have uttered a protest against the conception of Our Lord's character which underlies the French phrases about *le doux Jésus*. Jesus was, as Mr. Temple says, no sentimentalist; no man ever made higher claims or exacted more from His followers. But Mr. Temple, as I think, goes to an unjustifiable extent in the other direction. When he depicts Jesus as a person to whom none of His followers could venture to offer advice without being withered to earth for their audacity, he seems to me to be ascribing to Him the quality of a *poseur* and charlatan. I do not for a moment believe that He was a stickler for His "dignity". And in the case to which Mr. Temple refers, St. Peter was rebuked not so much for offering advice as for the quality of the advice he offered.

I might also suggest a doubt whether the conception of the λόγος has anything to do with the Old Testament prophetic expression "the word of the Lord," which, as Mr. Temple of course knows, is in Greek always ῥῆμα κυρίου.

And at page 365, where Mr. Temple is essaying the dangerous task of explaining the doctrine of the Trinity, I cannot help suspecting that his explanation is hardly orthodox. Is it really sound Christian theology to say that the activity of the Father is in Eternity but that of the Son and Spirit in Time? I am sure at least that Mr. Temple unconsciously perverts the meaning of the passage he quotes from St. Thomas. St. Thomas says, as Mr. Temple will see on looking up the context, that "if the Holy Spirit did not proceed from the Son, He could not be personally distinguishable from the Son". This is an argument against the Greek doctrine of the "single procession," and the point is that we know *antecedently* that the Spirit *is* personally distinguishable from the Son, and as this could not be, but for the relation of "procession," we may conclude that the Spirit proceeds from the Son. The "personal distinction" is one of the *premisses* of St. Thomas's syllogism; Mr. Temple makes it the conclusion, "the Spirit is only distinguishable from the Son because of His proceeding from Him". He converts what in St. Thomas is a *ratio cognoscendi* into a *ratio essendi*.

A. E. TAYLOR.

Problems of the Self: an Essay based on the Shaw Lectures given in the University of Edinburgh, March, 1914. JOHN LAIRD. Macmillan & Co. Pp. xiii + 375.

THE substance of this acute and learned work was delivered shortly before the war, and its publication only increases one's longing to return as soon as possible from the present madness to the sensible employments of those days.

I shall endeavour to give a synopsis of Prof. Laird's book and then to criticise certain points which seem to me both important and doubtful.

To inquire into the nature of the self we must begin by discussing experiences; it is only when we have done this that we can tell whether they and their relations suffice to constitute a self or whether some further constituent be essential. Experiences are the subject-matter of psychology, and, in the second chapter certain fundamental problems in the latter science are discussed. Among these are (i) the distinction between cognitive acts, universals, sense-data and physical objects. Of these the first are certainly experiences, the second and fourth are certainly not, whilst the third—though they are objects and not experiences—may be partly mind dependent. (ii) The nature and possibility of introspection are next discussed. The arguments against its possibility and trustworthiness are rejected on grounds which seem to me perfectly conclusive, and it is suggested that we may have direct knowledge of other men's minds. (iii) Introspection tells us that cognitive acts are acts of reference to objects and that they may differ in 'quality,' in the sense in which doubt differs from belief or supposition. (iv) The tripartite division is next discussed. As offered it seems to lack any definite *fundamentum divisionis.* Prof. Laird takes the view that all experiences refer to objects (though he admits to a slight doubt about feelings). He then divides these acts of reference into dynamic and adynamic. The latter are cognitions. The former are divisible into those in which the object is affected (Conations) and those in which the object affects the subject (Feelings). We may say that 'endeavour is *guided* by cognition and *prompted* by feeling'.

In the third chapter Prof. Laird discusses whether the body can be considered to be in any sense part of the self. He decides that it cannot, and tries to explain why it should seem plausible to hold that it is. In his view organic sensations are cognitive acts which tell us about certain states of our bodies. These states are objects and not experiences. Hence they are not parts of the self; but they have certain characteristics which make them easily confused with true feelings which are parts of the self. Our bodies may be essential to ourselves and they are our own in a special way, but this does not make them *parts* of ourselves.

In the next five chapters Prof. Laird discusses in turn the alleged primacy (*a*) of feeling, (*b*) of conation, and (*c*) of cognition over the other factors in mental life. His conclusion is that all are essential and none prior to the others. If feeling be a reference to an object it is no more private than any other experience. Nor is it relevant, even if true, to say that the self has developed out of a mass of feeling. This would only amount to a priority of feeling *to* the self, not to a priority of feeling *within* the self. And it is only plausible to say that the self develops out of mere feeling when you define feeling as that state of mind which is too vague to be classified under any other head. With this sense of feeling the priority of feeling is unimportant.

The fifth chapter begins with an analysis of activity. Prof. Laird concludes that it consists in initiation and novelty, which are not, however, independent of the past or of present conditions. There is no reason to deny that activity is a part cause of changes, but no reason to think that it is the only kind of cause in the world or even in the self. Chapter vi., which deals with the psychical and the purposive, discusses the arguments of neovitalists. Purpose is supposed to be a mark of life, hence of the self, hence to be the primary factor in the self. This is, as Prof. Laird points out, at best a *non sequitur*. Purpose too is most ambiguous. It may mean (*a*) conscious volition, or (*b*) explanation in terms of a system, or (*c*) value. The reason why the same name is applied to three such different things is that conscious volition leads to a system of means and ends which cannot be externally distinguished, and that such systems have value. It is impossible to prove that mechanism (in which Prof. Laird appears to include physics and chemistry) will not explain the phenomena of life. Even if it will not there is little reason to think that there is much conscious purpose even at the level of instinctive processes, and therefore still less to assume it in processes of growth and reproduction. All that is really needed to explain the facts is to suppose that some wholes are such that their parts act very differently when removed from them and placed in different surroundings. Hence there is no reason to see a psychical principle, still less a conational one, in the phenomena studied by the anatomist and physiologist.

The discussion of the alleged primacy of the will is concluded in a long chapter (vii.) where Kant's Practical Reason, Fichte's Ich an Sich, Schopenhauer's Will to Live, and Bergson's Élan Vital are described and criticised. Prof. Laird has naturally little difficulty in finding confusions in Schopenhauer; and his sympathetic treatment of Fichte, accompanied with long quotations, only persuades me more than ever that Fichte is as negligible as he was disagreeable. Whatever it be that Bergson takes as primitive it is *too* primitive, Prof. Laird holds, to be identified with conation rather than with any other side of developed mental life. As to Prof. Laird's views on Kant I shall have something to say of these later.

Chapter viii., on the Self as Knower, can hardly be said to deal with the alleged primacy of Cognition. This, Prof. Laird thinks, has been sufficiently refuted by the arguments of those who attempted (though vainly) to prove the primacy of feeling or conation. He therefore devotes the chapter to some problems connected with cognition. Experiences are parts of the self, and not qualities; for they are particulars and not universals. Moreover they are neither parts nor qualities of the body. The components of the self, on Prof. Laird's view, are thus acts, their 'qualities,' and their 'content,' but never their objects, even if these be mind-dependent. To the objection that this makes the self but a poor thing, Prof. Laird replies (*a*) that this is the conclusion to which reflexion on the facts forces us, and (*b*) that 'contents'—in the sense of differences in acts correlated with differences in their objects—are probably necessary to explain association. They do supply a good deal of variety within the self, though they are not capable of being studied introspectively.

Lastly, there is nothing about *individual* cognitive acts to force us to assume a pure ego as knower. Lotze's arguments only suffice to refute presentationism, whilst Russell's much milder contention that, to understand the proposition I am aware of x, I must be acquainted with that of which *I* is the proper name, rests on a false analysis of cognition. My awareness of x is not a relation between me and x; the only relation is between my awareness and x. There is also nothing in the fact of self-cognition to show that any factor in the self is always doomed to be a subject and not an object.

Prof. Laird therefore concludes that *single* experiences will not force us to assume any factor in the self which is not an experience: it is possible, however, that the unity and continuity among our *various* experiences may require some new factor for its explanation. In chapter ix. he therefore discusses the Unity and Continuity of the Self. He holds that the unity of cognition varies *pari passu* with that of the cognised object and that corresponding unities of feeling and conation exist. But isolated strands of our mental life have much more internal unity than the self as a whole. Indeed, now that mere presentationism has been refuted, we can afford to admit that the unity of mental life tends to be exaggerated. Such unity as there is is doubtless in part dependent on external objects and on bodily sensations, but these are *conditions* not *component parts* of the unity.

The next question then is: What are the ontological conditions of the amount of unity that we find? This question is discussed, mainly with reference to retentiveness, in chapter x. Prof. Laird holds that it is improbable that retentiveness can depend solely on the brain. He accepts the view that we must grant the existence of subconsciousness, though he thinks that most of the arguments for it are weak and declines to extend its range very far or to expect it to perform miracles. Stumpf's argument he criticises on physiological grounds.

Chapter xi. contains an interesting discussion on three problems connected with multiple personality: (i) Do selves dissociate? (ii) Are the dissociated parts ever different selves? (iii) If so, are several selves ever coexistent in one body? He argues that, on any criterion of personal identity that we apply in ordinary life, (i) and (ii) must be answered in the affirmative, and that the same is probably true of (iii).

Chapter xii. contains a long, and to my mind, rather needless discussion of the history of the notion of substance since Descartes. In the thirteenth and last chapter we have Prof. Laird's own views as to the sense in which the facts force us to consider the self a substance. A substance is a term which can be a subject, but not a predicate. But this is not sufficient. It must be a particular existent. A characteristic of existents (though not a definition) is that our knowledge of them involves sensation. An existent involves two factors, stuff and form. These are not capable of separate existence, and you cannot identify a substance with the former in abstraction from the latter. The unity and continuity of a substance are then discussed and it is argued that what counts as *one* substance varies according to the criterion used. This does not, however, render the notion arbitrary or subjective, because the fact that it is more convenient for one purpose to count a certain system as one and for another purpose to count it as many depends on the nature of the system and the sort of the universe and not on our subjective caprice. The self is *a* substance (and, in general, *one* substance) *par excellence*, if by this you mean a complex particular existent which for practically all purposes has to be treated as one and as inexplicable in terms of anything else. It differs from the body, but this does not prove that it can survive the body, still less that it is indestructible. Survival and immortality are possible, but the continued existence of a substance can only be established through the evidence of the senses, which is necessarily lacking in the case of a disembodied self.

This is the gist of Prof. Laird's book. Before going on to criticise certain points I must say that I am in hearty agreement with the greater part of it; that it is much the best book on the subjects treated in it that I have met; and that it would be difficult to praise too highly the skilful way in which the author has managed to deal with a huge mass of problems without ever obscuring the main trend of the argument.

The first question which I want to raise deals with the position of feeling and with the tripartite division. All experiences, according to the author, are references to objects. He is a little less certain with regard to feeling than with regard to cognition and conation, but he thinks that, when the confusion between true feelings and bodily sensation is removed, it will be clear that true feelings are acts of reference. Now of course this is clear enough with regard to anger *with* someone, joy *at* some news, and so on. But are all true feelings of this type? Are they all *directed* feelings? On the other hand, is it not possible that a directed feeling is in a certain sense analysable into a feeling and a cognition? It is noteworthy that Prof. Laird admits (what is undoubtedly true) that the direction of feeling and conation to objects is always to objects *as cognised*, though the cognition may be very vague. Again there seem to me to be undirected feelings such as general depression. We may have the experience of feeling ill-tempered and looking about for an object of our ill-temper. Now I suggest very diffidently that perhaps the tripartite division in general, and feeling in particular should be treated in a very different way from

Prof. Laird's. It seems to me that the one act that essentially refers to an object is cognition. I suggest that feelings are states of mind not analysable into act and object at all. But upon cognitions and feelings may be *founded* (in Meinong's sense) acts of a higher order in which there is a specific kind of relation between a feeling and a cognised object. These complex acts, built upon but not totally analysable into true feelings and cognitions, may be called directed feelings, or, as I should prefer to say, emotions. *E.g.*, the undirected feeling of ill-temper would normally be called a feeling and not an emotion; but the state of anger with Smith, built upon this feeling and a cognition of certain propositions about Smith, would be called an emotion directed towards Smith.

I am much inclined to think too that conations are acts of a higher order founded upon cognitions and a special class of feelings (in my sense), and that the characteristic of these acts is that a special kind of relation unites these feelings with the cognised object. If this be true there will be a primacy of cognition in a sense which Prof. Laird does not discuss. It will not be primary in the sense that other states of mind can be deduced from it, but in the sense that all states of mind that have objects and are not themselves cognitions are acts of a higher order founded upon cognitions.

I think Prof. Laird assumes too hastily that all states of mind must be analysable into act and object. Doubtless it is obvious enough that a sensation of red means a sensation whose *object is red*, and not a red sensation. This is because there seems a clear incompatibility between the subject—sensation—and the quality —red—which involves extension, shape, etc., in its subject. But there is no obvious incompatibility in saying that a sensation of toothache means a 'toothachy' sensation, and not a sensation whose object is toothache. Again, suppose that all sensations be analysable into act and sense-datum. It still remains possible that sense-data, which are admitted to be probably in part mind-dependent, may be states of mind of the nature of feelings. This, I understand to be Prof. Stout's view, and I should have been willing to forego a good deal of the discussion about people of the calibre of poor dear Fichte to have it fully criticised. Personally I find it almost as difficult to believe that a feeling can be red as that a sensation can be red; yet this difficulty does not seem to affect Stout, and I must admit that I cannot see clearly that *all* so-called sensations (*e.g.*, those of headache) *must* be or even *are* analysable into act and object. It seems to me quite possible that, when we describe sensations as states due to the stimulation of a nerve, we describe two different classes of mental states: (i) True sensations, *i.e.*, acts whose objects are sense-data, *e.g.*, sensation of red and (ii) Bodily feelings, *i.e.*, states not analysable with act and object, such as feeling of headache. And in addition the question would remain whether sense-data be themselves of the nature of bodily feelings.

It is to be noticed that even if bodily feelings be not true sensations there will remain a distinction between them and what Prof. Laird calls psychical feelings. The difference is that headache and toothache do not seem capable of entering into directed feelings; you cannot have an emotion of toothache towards Smith; whereas anger and fear can be and generally are constituents in emotions felt towards cognised objects.

Prof. Laird's view, however, is that bodily feelings are genuine sensations, that they are the awareness of special sense-data peculiarly connected with the states of our own bodies. This view seems to me possible, though from what has gone before it will be clear that I do not think that it is necessary or even highly probable. There really is a very important difference between toothache, if this be regarded as a sense-datum by means of which we perceive a state of our tooth, and a red sense-datum by means of which we perceive the colour of a physical object. Prof. Laird says that *all* sense-data are probably in part subjective; this is doubtless true, but it is believed that by their sensations of somewhat similar red sense-data different people perceive the *common* redness of a *common* physical object. But my sensation of toothache, however like my toothache may be to yours, only enables me to perceive the state of *my* tooth, whilst yours only enables you to perceive the state of your tooth. Thus, if toothaches be sense-data, they not only have in themselves the subjectivity of an ordinary sense-datum, but also, unlike other sense-data, they do not lead various people to the cognition of a neutral physical object and its qualities. The argument that doctors can learn as much about the states of our bodies from knowing our organic sensations as from looking at our tongues is irrelevant to prove that a headache is a sense-datum, for the doctor's conclusion from what we tell him is inferential, whilst the relation between judgments of perception and the sense-data on which they are founded is certainly not inferential, whatever it may be.

Lastly, even if a toothache or a headache be objects and not states of mind, I should suppose that their painfulness is mental and not bodily. Pleasure and pain seem to me not to be states of mind or of body but qualities of states of mind. If toothache and headache be feelings then they are mental and their painfulness is a quality of these feelings. If you divide the experience of toothache into an act and a sense-datum, then I should suppose that the painfulness must be a quality of the act and not of the object.

To pass to a different point. Mr. Laird makes the self to be a complex whose components are entirely acts, their qualities, and their content, but not their objects. And he says that the self is *a* substance and *one* substance *par excellence*. But surely a psychical act is a mere abstraction apart from an object. I do not merely mean by this that it is *causally* dependent on an object in the sense in which mind might be causally dependent on brain, but that an act without an object is inconceivable. Now does not this make a self, which is conceived as a complex of acts, the merest abstraction and the very last thing to be regarded as a particular existent substance and the ideal example of substance?

Again I cannot see that Prof. Laird has produced the least evidence for his view that we have direct knowledge of other minds. The argument that we do not first notice that anger in us is accompanied by frowning and then infer that frowning in others is accompanied by anger seems to me true but irrelevant. No doubt we no more establish the existence and states of other minds by inference from their bodily actions than we establish the existence and properties of bodies in ordinary perception by inference from our sense-data. I should suppose that we start with an instinctive belief both in minds and bodies, and in general pass immediately from perceived gestures to judgments about states of mind, as we pass immediately from the awareness of sense-data to judgments about physical objects. It is only when someone questions our right to do this that we excogitate arguments based on analogy in the one case and on causation in the other. If then the absence of inference does not prove that we are directly aware of physical objects it will not prove that we are directly aware of other minds. I do not know exactly what Prof. Laird means to maintain when he says that we are directly aware of other minds. He might mean (*a*) that some of the states of other minds are direct objects of our own in the same way in which sense-data are and in a way in which physical objects and their qualities are probably not; or (*b*) that we have a special kind of sensations and that by means of the sense-data cognised in these we pass directly to judgments about the existence and qualities of other minds, just as we pass to judgments about the existence and qualities of physical objects directly from sense-data of sight, touch, etc. If the analogy with introspection is to hold he presumably means (*a*). Now either of these views is possible; but personally I cannot detect in myself a direct awareness of other men's states of mind or an awareness of a special kind of sense-datum through which I perceive other men's states of mind. I have thus no direct evidence in favour of Prof. Laird's view, and he does not suggest that he has any. And the facts do not, as I have tried to show, necessitate his view. I think it would be probably fair to say that we often perceive other men's states of mind, if by this you merely mean that our beliefs about them are not *reached* by inference, though possibly *defensible* by inference. But if you mean that they are direct objects of some of our cognitive acts, or that there is a special kind of sensation on which a perception of them is founded, then I should consider the statement baseless and probably false.

To turn to another question. I do not accept Russell's argument to prove that we must be acquainted with at least momentary selves, but I also do not accept Prof. Laird's refutation of it. The fact admitted is that we understand such propositions as I am acquainted with x. Russell makes this a relational proposition of the form (I) (am acquainted with) (x). Laird makes it into (This acquaintance of mine) (is with) (x). At least this is how I understand him. On one analysis I must be acquainted with that whose proper name is *I*, on the other with that whose proper name is *This acquaintance of mine.* Russell's argument fails because it is mere dogmatism to assert that his is the right analysis, but Laird's counter-argument is merely the counter-dogmatism that acquaintance is not a relation.

I will now say something about Prof. Laird's statements as to practical and speculative reason. The question is: In what sense does reason determine a right act. Prof. Laird's argument on page 159 seems to come to this: Rightness of act = rationality of act; therefore being determined by its rightness = being determined by its rationality; and this = being determined by reason. The last step in this argument seems to be a *non sequitur*. It appears to me that three factors are involved: (i) the rationality of the act, which is a quality of it and would exist whether we had reason or not; (ii) reason, *i.e.*, the faculty of our minds by which we recognise rationality in acts, coherence in arguments, and so on; (iii) the desire to do those acts which we judge rational and to believe those propositions which we judge to be true. Any of these factors might exist without the other two and it cannot be said that any one of them determines our act or our belief more than the rest. The truth is that we are not determined by reason in such acts in any more important sense than we are determined by sight in avoiding a puddle. In the latter case it would be far more in accord with ordinary language to say that we are determined by the wetness of the puddle, or by our dislike of getting wet. And in the former it would be more in accordance with ordinary language to say that we are determined by the rationality of the act, or by our desire to do what is rational. The truth of course is, as Prof. Laird admits, that there is no primacy of practical over speculative reason. Indeed the whole terminology is ridiculously misleading. There is a desire to do what is believed to be right, and this is operative in moral choice; and there is a desire to believe only what is seen to be coherent, and this is operative in speculation. There is also a power of recognising the formal characteristics of rightness and of logical coherence. This faculty may, if you like, be called reason. The two desires may be called a desire about practice and a desire about speculation. Reason, accompanied by the former, is practical reason; accompanied by the latter, speculative. There is clearly no question of priority between them; and, if there were, it would have no bearing on the primacy of conation over cognition, since *both* involve conation and cognition in precisely the same relation to each other.

Lastly, I must say a few words about the subconscious and

Laird's criticisms of Stumpf's argument. In discussing these subjects there are, I think, a number of distinctions which Prof. Laird might with advantage have drawn. (i) The distinction between dispositions (*e.g.*, badness of temper, etc.) and traces (the supposed permanent effects left by past experience). The former can hardly be called states of mind, they are qualities of the mind as explosiveness is a quality of dynamite. They may, of course, be dependent on some permanent state or structural peculiarity. But I cannot see the least reason to think that they are states in the same sense as a particular exhibition of temper is a state of mind. (ii) The question whether you can be aware of a sense-datum without at the same time being aware of all its parts, and the question whether you can be aware of it without being aware of all its qualities and relations. If a sense-datum be not counted as a state of mind then Stumpf's argument seems to have no bearing on the question of subconscious states of mind, for it deals with sense-data. If it be counted a state of mind then its parts will presumably be states of mind, but its qualities and relations will not. Now Stumpf's argument deals with the relation of identity and diversity between qualities of sense-data. Hence, whether the argument be true or false, and whether sense-data be or be not states of mind, it has no bearing on the question of subconscious states of mind.

Now I think that Stumpf's argument can be stated without the slightest reference either to physics or to physiology. There are series of sensations s_1 s_2 s_3 such that, if σ_1, σ_2, σ_3 be the corresponding sense-data, σ_1 is judged to be qualitatively identical with σ_2, σ_2 with σ_3, and σ_1 is judged to be qualitatively different from σ_3. As a mere matter of logic these three judgments cannot all be true. Hence we must either be judging qualitative identity when there is qualitative difference or conversely. Now the former is much the more probable error. Hence sense-data almost certainly may differ when we judge them to be identical in quality.[1]

I must bring this long review to a close. It has been a delight to read a book occupied with psychological problems which avoids the 'havering' so characteristic of most psychological writings, and maintains a steady argument at the level which we expect in a good treatise on logic or the natural sciences. Prof. Laird maintains a standard almost as high as that which he seems to consider normal in maiden aunts, whose 'usual accomplishments,' he says on page 260, include the power 'to knit, to read a novel, and to engage in conversation simultaneously'.

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[1] In fact there is nothing to prevent Stumpf from employing his argument in heaven to the angels, even if they have no bodies, provided only that they have sensations.

C. D. BROAD.

The Organisation of Thought, Educational and Scientific. By A. N. WHITEHEAD. London: Williams & Norgate, 1917. Pp. viii, 228. Price 6s. net.

THIS volume consists of eight chapters: seven of the chapters are reprints of addresses and papers originally delivered between 1912 and 1917, and the seventh chapter alone has not been published previously and deals with "The Anatomy of Some Scientific Ideas". The first five chapters deal with education, and the remaining three consist of discussions on certain points arising in the philosophy of science. "But a common line of reflexion extends through the whole and the two sections influence each other. . . . The various parts of the book were in fact composed with express reference to each other, so as to form one whole" (p. v).

Dr. Whitehead has written a book of the first importance. Not only is it of great suggestiveness to all who have to do with the teaching of logic and pure and applied mathematics, but it contains many of the author's recent contributions to the philosophy of science. In matters of education, Dr. Whitehead's occupation with the teaching of the technical aspects of science as well as with the purely logical aspects has resulted in a wide and deep sympathy with ideals and methods of education which do not make the student feel that education is unconnected with the most interesting parts of his Life. It should be pointed out in this connexion that Dr. Whitehead hints (pp. 81-82) that the history of mathematics, where the word "history" does not denote merely a barren collection of names and dates, may perhaps play a leading part in the reforms he advocates The two commandments in education are (p. 3): Do not teach too many subjects; and: What you teach, teach thoroughly; and the consequences of these maxims, which allow us to avoid the evil results which necessarily follow if we teach disconnected scraps of information, are developed with vigour and earnestness.

Dr. Whitehead's point of view is somewhat different from that of Plato. The essence of a liberal education, in Plato's ideal system, is an education for thought and æsthetic appreciation; the action which it contemplates is command, and it is an aristocratic education implying leisure. This Platonic ideal has encouraged art and has fostered that spirit of disinterested curiosity which is the origin of science (p. 34); and, in Plato's opinion, for a liberal education, geometry, as he knew it, is the queen of sciences (p. 95). But Plato did not include technical education in his scheme, and yet: "Disinterested scientific curiosity is a passion for an ordered intellectual vision of the connexion of events. But the goal of such curiosity is the marriage of action to thought. . . . No man of science wants merely to know. He acquires knowledge to appease his passion for discovery" (p. 37). And so we read: "The insistence in the Platonic culture on disinterested intellectual appreciation is a psychological error. Action and our implication in the transition of events amid the [in]evitable bond of cause to effect are fundamental. An education which strives to divorce intellectual or æsthetic life from these fundamental facts carries with it the decadence of civilisation" (*ibid.*); "The antithesis between a technical and a liberal education is fallacious" (p. 38); and "An evil side of the Platonic culture has been its total neglect of technical education as an ingredient of the development of ideal human beings" (p. 41). It is a characteristic of this really great book that the importance of technical education by the side of logical education is emphasised, but it is appropriate, in the rest of this notice, to confine our attention to logical questions.

In mathematical education what we wish to arrive at is a clear grasp of general ideas. It is to be remembered in teaching that this grasp is not what the pupil starts from but is the goal at which he is to arrive (p. 96); "Mathematics is nothing else than the more complicated parts of the art of deductive reasoning, especially where it concerns number, quantity, and space" (p. 45; *cf.* p. 46). The educational merit of mathematics in strengthening the power of abstract thought is again pointed out on pages 93-94; indeed, "the fundamental mathematical truths concerning geometry, ratio, quantity, and number, satisfy these conditions as do no others" (p. 94), and hence one of the chapters (pp. 92-104) is devoted to the investigation of the place which should be occupied by modern investigations on the principles of mathematics in the education of schoolboys, even of those who require only a restricted mathematical education.

"Science," says Dr. Whitehead (p. 114), "is essentially logical. The nexus between its concepts is a logical nexus, and the grounds for its detailed assertions are logical grounds". Logic is disliked by most men of science because for hundreds of years it has been barren. This was the case because of worship of authority, and "a science which hesitates to forget its founders is lost" (p. 115): Aristotle founded logic "by conceiving the idea of the form of a proposition and by conceiving deduction as taking place in virtue of the forms": he confined propositions to four forms, whereas modern logic has shown that there is an infinity of such forms. Another reason for distrust of logical theory is the mistaken belief that deduction can give us nothing new (p. 115). There is (pp. 116-126) an admirable sketch of modern logic, and there is (pp. 128-132; *cf.* pp. 156-178) an account of that great contribution of Dr. Whitehead to the logical principles of mathematics—the construction of "points" of space and time, and so on, described by Mr. Russell in his Lowell Lectures on *Our Knowledge of the External World as a Field for Scientific Method in Philosophy* (Chicago and London, 1914) and in Dr. Whitehead's article the *Revue de Métaphysique et de Morale* for May, 1916. There are also some very interesting passages on the relation of inductive logic, or the logic of discovery, to deductive logic, or the logic of the discovered (pp. 44-45, 107-108, 127-128, 132). Even more original are the above mentioned seventh chapter and the eighth chapter. The seventh chapter discusses "the natural history of ideas and not volitions of scientists" to show that "there is a twofold scientific aim: (1) the production of theory which agrees with experience; and (2) the explanation of common-sense concepts of nature, at least in their main outlines" (p. 140), and deals with fact, objects, time and space, and fields of force. The eighth, on "Space, Time, and Relativity," was published in 1916 in the *Proceedings of the Aristotelian Society*, and brings into relation with each other the standpoints of mathematical physics, experimental psychology, metaphysics, and mathematics.

But, it may be asked, where is required any "organisation" of our thought in scientific teaching or scientific discovery? "Organisation," says Dr. Whitehead (p. 105), "is the adjustment of diverse elements so that their mutual relations may exhibit some predetermined quality," and goes on to explain that a good epic poem is a triumph of organisation and that science is a thought organisation of a certain definite type which he proceeds to determine. It seems, then, that "organisation" means the same as what Dr. Whitehead calls (p. 24) "the most austere of all mental qualities; . . . the sense for style". Indeed, this sense "is an æsthetic sense, based on admiration for the direct attainment of a foreseen end, simply and without waste. Style in art, style in literature, style in science, style in logic, style in practical execution have fundamentally the same æsthetic qualities, namely, attainment and restraint. . . . The administrator with a sense for style hates waste; the engineer with a sense for style economises his material; the artisan with a sense for style prefers good work. Style is the ultimate morality of mind" (pp. 24-25). Thus we see that what Dr. Whitehead understands by "organisation of thought" is one form of what is known as the "economy of thought". Mach, in his various writings, seems to have called several principles which are more or less allied by the one name of "the economy of thought," and it is evident that that form is emphasised by Dr. Whitehead which is closely akin to Occam's razor—which Mr. Russell has called "the supreme methodological principle".

The economy of thought, it seems to me, throws light on the "logic of discovery," which does not appear to be very clearly explained by Dr. Whitehead. It seems a misuse of the term "logic" to apply it to a method of discovery, just as it is a misuse of the term with politicians and ignorant people to speak of "the logical consequences" of a certain policy. The fact seems to be that we do not make use of deduction to any great extent in the process of discovering even logical conceptions. Take Cantor's conception of "continuity" for example: the most interesting point about this conception is that it seems to be the most precise conception we can devise to agree more or less with the vague images which are called up in the minds of some people by the word "continuity".

Discovery is carried on by such vague impulses and wishes ; and it may quite possibly be a suspicion that logicians claim to have a "logic of discovery" that has led Henri Poincaré and many others to the mistaken idea that "intuition" is in some way opposed to, and a nobler thing than logic. The true place of logic in discovery seems to be indicated on page 132: "The mind untrained in that part of constructive logic which is relevant to the subject in hand will be ignorant of the sort of conclusions which follow from various sorts of assumptions, and will be correspondingly dull in divining the inductive laws".

As regards the relations of science to metaphysics, the apportionment of the world to metaphysics and science on pages 109-110 is of interest (*cf.* pp. 114, 187). And in the seventh chapter (p. 190) we read: "Science only renders the metaphysical need more urgent. . . . After all, science embodies a rigorous scrutiny of one part of the whole evidence from which metaphysicians deduce their conclusions."

The following misprints may perhaps be pointed out: p. 117, line 10, for "last" read "least"; and on p. 37, line 10, for "evitable" read "inevitable".

PHILIP E. B. JOURDAIN.

VIII.—NEW BOOKS.

The History of European Thought, An Introductory Book. By W. T. Marvin. New York: The Macmillan Company, 1917. Pp. xiii, 439.

Dr. Marvin's "introductory book" has certain unmistakable merits. He is laudably anxious to impress it on even the members of an introductory class that philosophy is a part of the general civilisation of man and that its history is affected in varying degrees of directness by any conditions which influence that general civilisation. And he quite rightly insists that for beginners a "history of philosophy" should be confined to an account of the main tendencies of speculative thought in their relation with those other tendencies which make up what we call—or used to call before recent events had given the word ominous associations—the "culture" of a people or an age. There should be no elaborate details of minor significance about the "systems" of great philosophers, to be "crammed" by pupils who as yet have never read a line of those philosophers' works. In the main Dr. Marvin makes a very creditable attempt to execute the task he has set before him in a work short enough to be studied and lectured on in the course of a single session. Of course the different parts of his story are more or less well told, according to the quality of the authorities he has followed. I think what might be called his "pre-historic history" of the origins of intellectual civilisation suffers from a tendency to inculcate what are after all only doubtful anthropological speculations as if they were established truths, and I feel sure the important subject of the connexions between Greek religion and Greek science has been more seriously affected, partly by this same tendency and partly by an anxiety to apply to both Greek religion and Greek philosophy a well-known but quite superficial antithesis invented by William James, who was after all no great scholar in the history of thought, between "tender-minded" and "tough-minded" thinkers and systems. Thus there is really no ground whatever for the *extreme* antithesis, taken from Messrs. Cornford and Gilbert Murray, between the Olympian and Chthonian forms of religion: there is diversity of tendency, but when the diversity is exaggerated into an absolute antithesis and made to dominate the whole of Greek philosophy we are passing from history into the realm of arbitrary fancy. To specify only one consequence of this exaggeration, there is really no sense in asserting that the "Olympian" religion somehow favoured the growth of science more than the "mystery religions," or in classing the Pythagoreans, the inventors of mathematics and mathematical physics, as "tender-hearted" romantics. The Ionian cosmologists led the way in early Greek natural science, not because they believed in the gods of Homer, but precisely because they did not trouble themselves about gods at all. So again, Dr. Marvin is fond of contrasting the "orderly," "tiny," "geocentric" universe of the "Greeks" with the vast and apparently disorderly universe of modern astronomy. Surely he forgets that the standing doctrine of the early physicists was that of "innumerable *οὐρανοί*". Before Plato and Aristotle it was the exception to find a thinker who believed in a single *οὐρανός*.

On the whole period from Thales to Aristotle Dr. Marvin is, in the main, very good, thanks to his judicious choice of Prof. Burnet as the principal authority to be reproduced. He seems to me less satisfactory as soon as he gets to the third century, which he represents as one of scientific decadence due to the vanishing of the free city-states. He seems to forget that nearly all the greatest names in Greek mathematic and physics belong to this very age, and also that for all serious purposes the city-state had become a mere ghost of itself before Plato wrote a single line. Nor do I think him very satisfactory on the latest developments of Greek philosophical thought. Plotinus seems to impress him—I trust I am not doing him an injustice—as a decadent who alternated between empty emotionalism and the encouragement of sorcery. No one who has read Plotinus with intelligence could ever mistake him either for a sorcerer or for an emotionalist, but Dr. Marvin unfortunately pitches on Harnack (a writer not remarkable for philosophical power), as his authority, and appears moreover to cherish what I should call the exploded superstition that "progress" in philosophy is the same thing as steady approximation to a contented secularism. If I may say so, it seems to me to be a tacit assumption underlying his whole book that Christianity has been proved to be false. He is free, of course, to believe this, but I think it should have been explicitly stated that if he is mistaken on this point, his whole standard of progress will have to be revised.

The least satisfactory chapter of the book is that on Mediaeval Thought. The author is here writing of what he has little sympathy with and depending on authorities who, if he reproduces them correctly, have some singular prepossessions. Hence he gives to the conflict between Realism and Nominalism quite an undue prominence, and moreover never seems clear on the nature of the issue or the historical facts. If his authorities really led him to think of Scotus as a nominalist opponent of the realist Thomas and a precursor of Ockham they must have been very inadequately aware of the historical truth that Scotus was the leading figure in the later Franciscan realist movement, and that it is mainly against him that the polemic of his pupil Ockham is directed. I am quite sure that Dr. Marvin would not have written as he has done about the "nominalist" attack on the "proofs of the existence of God," if he had known that the most deadly attack on St. Anselm's argument, (the only "proof" to which he ever refers) was made by St. Thomas and that Scotus, whom he seems to regard as a nominalist, like Leibniz accepted the "ontological proof" as valid but incomplete. Dr. Marvin shows such ability as an "epitomator" that I am sincerely sorry he did not take Farnell as his authority on Greek religion, and Bäumker or Picavet as sources for his account of the schoolmen. And he might at least have offered some explanation of what is to me the very perplexing assertion that nominalism is somehow bound up with Protestantism, nationalism, democracy, and industrialism. By this way of thinking our modern International Socialists who despise national patriotism and hate the modern industrial system should surely be advocates of *universalia ante res*. But are they? And similarly the philosophical mathematicians like Mr. Russell, whose belief in their mathematics compels them to be realists, ought to be pillars of High Toryism. But again, are they?

In the section devoted to modern philosophy, Dr. Marvin deserts the method of strictly historical study for a dialectical discussion of such leading issues as those of rationalism *versus* naturalism, the claims of such ideals as those of phenomenalism, positivism, (modern) idealism, pragmatism, the "new" realism, and the like, and the great historical figures are only brought in incidentally by way of illustration. This is perhaps advantageous for his immediate "pædagogical" purpose of interesting the beginner in philosophical problems, but the change of method, of course, seriously interferes with the unity of his work as a piece of literature, and it seems a pity that even a beginner should not be told as much about the ground-pattern of the philosophy of such men as Descartes and Kant as Dr. Marvin has told him in the case of Plato and Aristotle. Hence I feel inclined to ask the question whether from the "pædagogical" point of view it is really the best course to attempt anything so ambitious as a study of the whole history of philosophy. Would it not be better to confine the attention in the first year of study, to a single, fairly well delimited and not too extensive period, to be studied simultaneously by reading of original works, and by lectures going into reasonable detail on the history of that special period, leaving the study of the history of thought as a whole to a later stage. *E.g.* if you can make a pupil really grasp the character of the problems faced in Plato's *Republic* or Descartes' *Meditations* and the answers given to them by those philosophers, and also understand how the conditions of the age of Plato or of Descartes led to the questions being raised in just these forms, and receiving just this kind of answer, have you not really done a good year's work in teaching him what it is to philosophise? Is your pupil any the worse off because in his study of Plato he has not heard anything directly about Roger Bacon or Dr. Schiller, or in his study of Descartes, about Parmenides or Epicurus? When he does come to concern himself about these personages, he will bring to his judgment of them, if his earlier studies have been rightly directed, a prepared and competent mind.

A. E. T.

A Beginner's Psychology. By Edward Bradford Titchener. New York: The Macmillan Company, 1916. Pp. xvi, 362.

In the present volume Prof. Titchener has produced what practically amounts to a new introductory text-book to Psychology. For although, to some extent, it is based upon the older *Primer*, "which will not," says Titchener, "be further revised," this *Beginner's Psychology* is new, both in its manner of presentation, and in much of its subject matter. The book is attractive and successful, and in the hands of a competent teacher should form an admirable introduction to its subject. Excellent illustrations abound, and no chance is lost of urging the student to attempt analysis of his own experience. The volume, however, can hardly be said to be easy reading. Prof. Titchener's very delicacy, and sensitiveness of introspection frequently, as in much of the treatment of "attitudes," tends to render his exposition hard to follow. There are occasional, perhaps unavoidable, lapses into dogmatism, as in some of the discussion of the "context theory" of meaning; and possibly the book as a whole gives the impression that psychology has been more eager in its undertakings than successful in its results. However, there is no doubt that an elementary treatise is the hardest of books to write, and the easiest to criticise. When everything has been said, it remains true that Titchener has covered the ground of an introductory course in a most interesting and efficient manner. Ingenious exercises are appended to each chapter, together with lists of further authorities. The latter, though the selection occasionally appears somewhat perverse, possesses the excellent feature of containing a number of references to original research.

F. C. Bartlett.

Received also :—

Jean Lépine, *Troubles Mentaux de Guerre*, Paris. Masson et Cie., 1917, pp. 203.

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R. W. Sellars, *The Essentials of Philosophy*, New York, The Macmillan Co., 1917, pp. x, 301.

H. Wildon Carr, *The Philosophy of Benedetto Croce*, London, Macmillan & Co., 1917. pp. vii, 213.

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Bertrand Russell, *Mysticism and Logic*, London, Longmans, Green & Co., 1918, pp. vii, 234.

Benjamin Kidd, *The Science of Power*, London, Methuen & Co., 1918, pp. 306.

J. Welton, *Groundwork of Logic*, London, W. B. Clive, University Tutorial Press, 1917, pp. xi, 356.

Margaret Drummond, *The Dawn of Mind*, London, Edward Arnold, 1918, pp. xi, 179.

A. J. Jacobs, *Neutrality Versus Justice*, London, T. Fisher Unwin, 1917, pp. vi, 128.

Frederick Bligh Bond, *The Gate of Remembrance*, Oxford, B. H. Blackwell, pp. x, 176.

Guido de Ruggiero, *Storia della Filosofia*, vol. i., Bari, G. Laterya & Figli, 1918, pp. 242.

Paul Elmer More, *Platonism*, Princetown University Press ; London, Humphrey Milford, Oxford University Press, 1917, pp. ix, 306.

Rev. C. J. Shebbeare, *The Challenge of the Universe*, London, Society for Promoting Christian Knowledge, 1918, pp. xxiv, 239.

IX.—PHILOSOPHICAL PERIODICALS.

Philosophical Review. Vol. xxvi., No. 2. **A. O. Lovejoy.** 'On Some Conditions of Progress in Philosophical Inquiry.' [Differences among philosophers go deeper and are less easily corrigible than differences among men of science. For philosophy has sought to combine edification with verification, and philosophers have failed in circumspection, in induction of pertinent 'considerations'. The remedy lies in a 'linked sequence of provisionally limited and hypothetical discussions' and perhaps in the co-operative preparation of a philosophical *Summa*, an encyclopædia of theses or problems given with all their relevant considerations.] **A. K. Rogers.** 'The Nature of Oughtness.' [The moral ought is neither the obligatoriness felt to reside in habit and custom, nor the perception of the logical relation of means to end. It rests upon native feelings of disapproval. Given a judgment of comparison of objects of approval and disapproval, and given a craving for the object of disapproval, the moral oughtness emerges.] **H. C. Longwell.** 'Philosophy as Handmaid of Society.' [Disinterested inquiry must remain an ideal only, since in the last resort it is bound to regard the welfare of society as the condition of all human activity.] **E. G. Spaulding.** 'Proceedings of the American Philosophical Association: The Sixteenth Annual Meeting, Columbia University, 27th and 28th December, 1916.' Reviews of Books. Notices of New Books. Summaries of Articles. Notes. —Vol. xxvi., No. 4. **B. W. Van Riper.** 'On Cosmic Reversibility.' [The notion of reversibility, whether it be the orderly undoing of its work by a machine, or a concept applicable to the ultimate hypothetical world of abstract physics, or an objective analogue of the backward reading of a mathematical equation, or a reversal of the time-stream itself, dissolves away into pseudo-mathematical dreaming.] **H. Haldar.** 'Leibniz and German Idealism.' [Leibniz' conception of ultimate reality as a system of minds in which an all-inclusive spiritual principle is realised is essentially that of Kant, Hegel, and Lotze: witness the final development of the thing-in-itself, Hegel's Absolute as impersonal unity of finite but perfect selves, and Lotze's relations as modes of the one all-embracing mind.] **H. E. Bliss.** 'The Subject-Object Relation.' [Objects exist external to and independent of subjects. Object implies not merely existence in relations but the special relation of appearance to a subject, or subjects, so qualified and so related as to apprehend such object. Subject is that to which objects appear, have appeared, or may appear.] Discussion. **C. Rinaker.** 'The Dualism of Mr. P. E. More.' [More's system is not dualistic; in its practical working it is partly pragmatic, and in the last analysis it is essentially idealistic.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes. **R. M. Yerkes.** 'Hugo Münsterberg.'—Vol. xxvi. No. 5. **A. Lalande.** 'Philosophy in France, 1916.' [Discusses the influence of the war on morality, by way both of present unification (Barrès, Petit) and of future problems (Belot, Maxwell); analyses Le Dantec's *Le problème de la mort et la conscience universelle*; pays a tribute to Delbos and Ribot.]

R. B. Perry. 'Purpose as Tendency and Adaptation.' [Neither temporal direction nor tendency nor the relation of an external agency to a tendency signifies purpose. The term might be predicated of adaptation or complementary adjustment (compensatory, progressive, preparatory); but we are here still in the realm of the automatic; and purpose is therefore best reserved for plastic or modifiable adjustment.] **J. Laird.** 'Introspection and Intuition.' [Critique of Bergson. Introspection, regarded as an act of direct acquaintance with the mind, is a feasible operation; and psychology therefore does not require a theory of knowledge peculiar to itself, or a special faculty of intuition.] **J. E. Creighton.** 'Two Types of Idealism.' [Mentalism or existential idealism asserts that everything is mental in character, and by thus transforming experience into an order of existences takes on the problem and mode of thought of realism. Historical speculative idealism sees that the reality known in experience, as existing concretely, forms part of a permanent system of relations and values; it thus holds fast to the unity of existence and significance. "Experience is at once an explication or revelation of reality, a comprehension of the mind of one's fellows, and a coming to consciousness on the part of the mind of the nature of its own intelligence."] Discussion. **A. O. Lovejoy.** 'Progress in Philosophical Inquiry.' [Reply to critics of the proposed *Summa Metaphysica*.] **J. Lindsay.** 'The Knowledge of Other Minds.' [Reality is the support of value, and selves may be known as well as their purposes and intentions.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes. **J. Loewenberg.** 'A Bibliography of the Unpublished Writings of Josiah Royce.' **W. M. Urban.** 'A Correction.'—Vol. xxvi., No. 6. **A. K. Rogers.** 'The Nature of Certainty.' [Certainty attaches to intuitions not because they are necessary but because they are self-evident. There is no ultimate necessary truth except the formal truth that reality cannot combine strictly contradictory predicates. Self-evidence applies solely to judgments about the content of present (or just past) experience, to the effect that this content exists and that such-and-such is an accurate description of it.] **H. C. Warren.** 'The Mechanics of Intelligence.' [Every factor concerned in the manifestation of intelligence (selection of movement, learning, satisfaction) may be adequately explained in neural (physicochemical) terms without the hypothesis of a guiding influence of consciousness. The value of consciousness is the subjective life which it furnishes to the individual.] **G. A. de Laguna.** 'Phenomena and Their Determination.' [We must distinguish real from pseudo-phenomena, which are intermediate; and analysis of a phenomenon into elements from its reduction to a collection of items occupying the same *locus*. Philosophical atomism assumes wrongly that, because any *locus* may be described in a certain way, any phenomenon may be so described.] **A. R. Chandler.** 'Professor Husserl's Programme of Philosophic Reform.' [Neither the reduction to pure consciousness nor the reduction to eidetic analysis affords to phenomenology any novel content outside the scope of an exhaustive psychology. The gain by concentration of attention is more than offset by the loss of a consistent method and of guiding ideas derived from other sciences.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes.

Psychological Review. Vol. xxiv., No. 4. Twenty-fifth Anniversary of the American Psychological Association. (1) **J. Jastrow.** 'Varieties of Psychological Experience.' [Retrospective notes upon analytical, comparative, applied, abnormal, and social psychology, with especial emphasis on the future of applied psychology and on psychognosis.] (2) **J. Dewey.** 'The Need for Social Psychology.' [A certain kind of associated or joint life, when brought into being, has an unexpected by-product: the formation of those acquired dispositions, sets, attitudes which are termed mind. Social facts are the material of an experimental science, where the problem is that of modifying belief and desire (*i.e.*, mind) by enacting specific changes in the social environment. We must gain a control of human nature comparable to our control of physical nature.] **M. W. Calkins.** 'The Case of Self against Soul.'] Historically the soul has been conceived not only as life and as immaterial substance, but also as conscious being (Plato, Aristotle, Augustine, even Descartes; the divorce of self from soul becomes explicit in Locke). The soul has no place in psychology, but the reinstatement of the self is imperatively needed.] **A. P. Weiss.** 'Relation between Structural and Behaviour Psychology.' [Behaviourism has as manifold possibilities of analysis and classification as has structuralism, with the added advantage that its phenomena can be represented as a causal series. The introspective reaction is only the habit of being able to react by speech, more or less adventitiously, to the weak stimulation of obscure receptors.] Discussion. **T. V. Moore.** 'Meaning and Imagery.' [Critique of Tolman.] **G. R. Wells.** 'Some Experiments in Motor Reproduction of Visually Perceived Forms.' [Visually exposed figures are drawn from memory more accurately when the drawing is screened from view than when it is followed by eye.]

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. xxviii., No. 1. **S. S. George.** 'Attitude in Relation to the Psychophysical Judgment.' [The judgments 'greater,' 'equal,' and 'less' may all occur under the same constant serial disposition. 'Doubtful' judgments imply the intrusion of an extra-serial attitude, and by the law of homogeneity must be excluded from the ordinary psychophysical computations.] **W. H. Burnham.** 'The Significance of Stimulation in the Development of the Nervous System.' [The reflex arc appears in the order effector organ, receptor organ, adjusting mechanism; nervous action in the order automatic, reflex, conditioned. The whole course of development is a matter of stimulation and response.] **S. C. Fisher.** 'An Analysis of a Phase of the Process of Classifying.' [The essence of the process is the mode of perception of the object to be classified: the regions of essential group-features are stressed in consciousness, resemblance permitting of ready passage, and difference arresting attention. In the latter case, certain contents (kinæsthetic, organic, affective) function as rejection.] **E. Cowles.** 'Research in Pathological Psychology and Bio-chemistry.' [History of the laboratories of the McLean Hospital. The trend has been toward the physicochemical study of nutrition and like problems, by aid of the concepts of energy potential, physiological use, protective and defensive reactions. Principles of a genetic or developmental character have emerged from concrete evidence of effects of overuse, waste in excess of repair, irritable weakness with lowered thresholds, failing inhibition with increasing activity tending to loss by exhaustion.] **S. W. Fernberger.** 'On the Number of Articles of Psychological Interest Published in the Different Languages.' [There is noticable decline of interest in French, and English is gaining ascendency over German.] 'Minor Studies from the Psychological Laboratory of Vassar College.' Book Notes. —Vol. xxviii., No. 2. **J. B. Watson** and **J. J. B. Morgan.** 'Emotionl Reactions and Psychological Experimentation.' [The original emotive reactions are fear, rage, and love. Experiment shows that, by the method of conditioned reflexes, the reactions may be transferred; and that the reaction furnishes a drive, by virtue of secretions present, lacking in ordinary instinctive and habitual actions. The results are applicable in education and business.] **H. W. Chase.** 'On the Inheritance of Acquired Modifications of Behaviour.' [Modifications of behaviour by intense and thorough integration of the organism are likely to be inherited by the formation of conditioned reflexes; such a view is supported by the hormone theory.] **J. J. B. Morgan.** 'The Effect of Sound Distraction upon Memory.' [The rote-learning of paired associates is interfered with by noise; the amount retained after two days is less; the range of attention is decreased. It is important to take a number of simultaneous measurements during a single test.] **L. M. Terman.** 'The Intelligence Quotient of Francis Galton in Childhood.' [Between three and eight Galton's quotient must have been not far from 200 (mental age double actual age); the highest found by the writer is 170, and those above 150 are extremely uncommon.] **H. W. Chase.** 'Psychology and Social Science.' [The social sciences have failed to distinguish between the content and the method of science. They must base upon a scientific study of the laws of human behaviour, conceived in terms of situation and response.] **C. F. Fraser.** 'Psychology of the Blind.' [Those blinded at eight to ten years of age visualise perfectly, those blinded at four to eight, imperfectly. The physical world of the blind is circumscribed by hearing rather than by touch.] **G. Murphy.** 'An Experimental Study of Literary *vs.* Scientific Types.' [Results of a word-association test; a good diagnostic character is that scientific subjects give many more 'members of a common pair associated by similarity'. Proposal of a new classification of associations for the purpose of the paper.] **E. B. Titchener.** 'Professor Stumpf's Affective Psychology.' [Consideration of Stumpf's reply to critics: Brentano, Kuelpe, Titchener, Ziehen.]

JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS. xiv., 8. **M. W. Calkins.** 'Purposing Self *versus* Potent Soul: A Discussion of Prof. Warren's "Study of Purpose".' [It is necessary to distinguish between vitalism and self-psychology.] **A. G. A. Balz.** Reports on the Sixteenth Annual Meeting of the American Philosophical Association. xiv., 9. **D. S. Robinson.** 'An Alleged New Discovery in Logic.' [Attacks elaborately Dewey's doctrine of the practical judgment.] **John Dewey.** 'Concerning Novelties in Logic: A Reply to Mr. Robinson.' [The criticism fails because it presupposes the authority of the older views of which the doctrine is a correction.] xiv., 10. **J. B. Pratt.** 'A Defence of Dualistic Realism.' ["To insist that dualism cannot be accepted because inferential knowledge and transcendence seem a bit hard to understand, and then to adopt in its place a theory so bristling with irreconcilable characteristics as I think I have shown pan-objectivism to be, would suggest forcibly the interesting performance of straining at an gnat and swallowing the camel."] **M. R. Cohen.** 'The Distinction between the Mental and the Physical.' [Maintains that "while we must, by all means, keep the distinction between the mental and the physical, we must reject the view that they are mutually exclusive". A 'neutral monism' answers "the question how can the same entity be both in space and in consciousness," by remembering that "the same thing can be in a number of different classes which are not mutually exclusive".] **S. E. Jelliffe.** 'Dr. Watson and the Concept of Mental Disease.' [A reply to the article in xiii., 22, which insists that the Freudian terminology is not arbitrary but the fruit of experience and has pragmatic sanction because it works clinically.] xiv., 11. **W. Fite.** 'Consciousness—Where is It?' [Everywhere, wherever in the world, 'objects are constituted by a selective, personal, human interest for which they have a meaning:

to "look for the object in some separable, impersonal, non-conscious, non-human and non-significant element or entity" is vain. The difficulty about finding consciousness arises merely from taking up the standpoint of the observer, not of the agent.] **B. H. Bode.** 'The Nature of the Psychical.' ["Conscious behaviour is . . . a progressive transformation of the given situation so as to remould it nearer to the heart's desire." It is "essentially experimental; its method is at bottom the method of trial and error".] **H. E. Cunningham.** 'Theory as Truth: a Criticism.' [*Cf.* T. L. Davies in xiii., 9. "Our ideas are all hypotheses," "satisfactory plans of behaviour thus far," but "have no lease on the future". "*Enough* laws, we are told, close a situation, but it seems that we have never found enough laws in the whole history of thinking to close any question."]

REVUE DE MÉTAPHYSIQUE ET DE MORALE. Jan., 1917. **V. Delbos.** 'Caractères généraux de la philosophie française.' [Though clearness and rigid analysis are characteristic of French philosophy, it is a mistake to think that these have led the greater thinkers to excessive signification, or to a neglect of fact.] **L. Couturat.** 'Sur les rapports logiques des concepts et des propositions.' [The second chapter of C.'s unpublished *Manuel de Logistique.* Nothing new; but a good exposition of the elementary theory of propositions, classes, and propositional functions, with emphasis on the points of difference between the calculus of propositions and that of classes.] **F. Colonna D'Istria.** 'La logique de la médecine d'après Cabanis.' **A. Reymond.** 'L'éducation et la pédagogie expérimentales.' **Th. Ruypen.** 'Une Idée en Péril.' [The idea is that of Humanity, in the sense of an international culture and morality. The danger is from a narrow nationalism, such as is expressed by the Pangermans on the one hand, and the Paris Conference on the other. 'The attempt to think clearly in troublous times is as much a patriotic duty as a human one.' A noble and eloquent appeal in a temporarily unpopular cause.] 'Nécrologie.' [A short sketch of the lives of M. Ribot, the eminent psychologist, and of M. Henri Dufumier, a promising young logistician who has fallen in battle.] Vol. xxiv. No. 2. March, 1917. **V. Delbos.** 'Les conceptions de l'histoire de la philosophie.' [This is the first of three lectures by the late Victor Delbos in which he tries to determine the formal object of the history of philosophy. The two others will shortly be published in the *Revue.* This lecture contains, among other things, a review of the chief attempts in the direction mentioned from Thomas Stanley (1655) and Bayle (1695-1697) to Renouvier.] **F. Enriques.** 'Sur quelques questions soulevées par l'infini mathématique.' [The spirit of infinitesimal analysis caused the inductions which were found valid for numbers as great as wished to be extended to infinity, and this 'realist doctrine in its first historical form' was abandoned in consequence of further critical mathematical work. 'The work of renewal and modification of the realist doctrine gave rise to a second historical form of realism which has been pursued by . . . Georg Cantor, . . . and the philosopher B. Russell has developed in the widest sense the philosophical consequences of the realism thus introduced into mathematics.' The fundamental principle of this new doctrine is: 'Every infinity of objects virtually defined can be considered as a totality forming a class and constituting a *new* logical object. In distinction to what was assumed in the above first historical form, we suppose that the properties of this object are absolutely new, that is to say, it is not legitimate to enunciate them *a priori* by an *induction extended* from the finite to the infinite.' Even this second form of the doctrine is at any rate 'partially unsuccessful,' as is shown by the paradoxes of the theory of aggregates. It seems to the reviewer that this article suffers from a total omission of the fact that, since his well-known article in MIND for 1905, Russell has published many papers and books showing that it is possible, with some care and complication, to avoid the paradoxes spoken of by abstaining from the assumption that there are such things as classes at all. A further indication of the fact that Russell's work has not been properly appreciated is that the principle of infinite selection is said to be 'adopted by Russell and by Zermelo, etc.'] **L. Rougier.** 'La symétrie des phénomènes physiques et le principe de raison suffisante.' Note de critique scientifique. **F. Le Dantec.** 'Encore la dégradation de l'énergie.' [Occupied with the recent work by L. Selme (*Principe de Carnot contre formule empirique de Clausius*, Givors and Paris), which throws light on discussions between the author and B. Brunhes.] Étude critique. **L. Robin.** 'La "philosophie grecque" de M. J. Burnet.' [A long notice of Burnet's *Greek Philosophy. Part I.: Thales to Plato*, London, 1914.] Questions pratiques. **G. S.** 'Le sens de l'union sacrée.' Nécrologie. 'Josiah Royce.'

ARCHIVES DE PSYCHOLOGIE. Tome xvi., No. 2. **A. Ferrière.** 'La psychologie bibliologique d'après les documents et les travaux de Nicolas Roubakine.' [Outlines the life of Roubakine and his labours in behalf of popular scientific education, with illustrations of his methods. The proposed 'psychology of the book' is concerned with its contents, regarded as intellectual, affective, and volitional; with its production, marketing, and consumption (psychology of the author; of the printed work in relation to author, distributer, public; of the reader); and with the individual and social conditions of production and consumption.] **C. Baudouin.** 'Symbolisme de quelques rêves survenue pendant la tuberculose pulmonaire.' [Dreams due to repression of fears regarding health; the will to live, not the sexual instinct, is in play.] **C. Baudouin.** 'Psychanalyse de quelques troubles nerveux.' [Ideas of persecution and neuralgias due to a sexual complex and the repression of a desire for culture; sexual shock sublimated in artistic productivity.] **C. G. Jung.** 'La structure de l'inconscient.' [Psychoanalysis first reaches the personal unconscious, the layer of repression, and then penetrates to the impersonal unconscious, the collective psyche. The result is a dissolution of personality; the patient feels himself to be like a god; free rein is given to imagination. This stage can be overcome neither by regressive reconstitution of the *persona* nor by identification of individuality with the collective psyche; the patient must remain in touch with his unconscious, and treatment must proceed by way of interpretation of his imaginative ideas.] Recueil de Faits Documents et Discussions. **R. Weber.** 'L'orientation dans le temps pendant le sommeil.' [The tendency to wake at a given hour depends on an automatism; guesses at the time of casual waking have an average error of 45 minutes.] Bibliographie. Nécrologie, 1916.—Tome xvi., No. 3. **C. Jéquier.** 'L'emploi du calcul des probabilités en psychologie.' [Written for psychologists, and useful not only mathematically, but also because of its insistence on the tacit assumption of equality of probabilities *a priori*, on the conflict between the laws of homogeneity and of large numbers, on the necessity of exercising judgment.] Recueil des Faits: Documents et Discussions. **E. Claparède.** 'Rêve satisfaisant un desir organique.' [A dream which expresses overtly the desire for fresh air.] **C. Werner.** 'XIIme. Réunion des Philosophes de la Suisse romande.' [Discussion of Benrubi's paper on integral knowledge.] Bibliographie.

'SCIENTIA' (RIVISTA DI SCIENZA). Vol. xxi., April 1917. **Carra de Vaux.** 'Sur l'origine des chiffres.' [The author comes to the conclusion that the story according to which our numerals come from India is a Persian Neo-Platonic legend. This conclusion is based on the statement of the Arabian historian Masoudi that this and several other important inventions were made in the reign of the powerful and wise king Brahman. 'People who are even slightly familiar with (*un peu versées dans*) the history of philosophy will recognise this at once as a Neo-Platonic legend;' and the fact that the 'Era of the Creation' (a Persian era) is mentioned allows the author to conclude that the legend is Persian. A confusion has arisen on the subject of the word '*hind*,' or more exactly '*hnd*,' which was used to describe the numerals As a matter of fact, it seems to be a form of the Persian '*ènd*,' and thus 'signs of *hnd*' means 'arithmetical signs' and not 'signs of India'. Another example is the following: Apollonius of Perga, who was not an Indian, was said to be '*el-hindi*' in some Arabic manuscripts; so this word must evidently be translated as if it were '*el-hindasi*,' the geometer or engineer. It is to be noticed that in Arabian treatises the abacus is called '*takht*,' which is a Persian name. Thus the author concluded that the numerals originated in the Greek world, and the history of their slow diffusion is easier to explain if we admit that they are a Neo-Platonic 'or (*soit*) Neo-Pythagorean' invention, for the Pythagoreans are well-known to have had a taste for secrecy. From Greece the numerals passed to Persia and the Latin world, and from Persia to India and afterwards to Arabia. The shapes of the numerals were not taken from those of letters, but were formed directly by means of very simple conventions. These figures were due to the Neo-Platonists; they were known in the schools of Persia before they were known in Islam, and it is there that the Arabs found them. From Persia again they passed into India. This article seems to deserve great attention from those who are learned in the history of philosophy and in philology.] **F. Iñiguez.** 'Les spectres stellaires.' [Short account of the help that the study and photography of stellar spectra has given to knowledge of the constitution, evolution, motions, etc., of stars.] **É. Rabaud.** 'La vie et la mort des espèces. Secondième Partie: Les conditions de la persistance et de la disparition des espèces.' [Since the system of 'means of defence' does not solve the problem (*cf. Scientia*, March, 1917), we have to consider the question of the nourishment of organisms at the expense of one another and try to seize exactly the bearings of this fact on our problem.] **P. Fedozzi.** 'La crisi del diritto internazionale.' [The laws which regulate international relations have been disregarded in the most flagrant way by Germany, but they have also been more or less disregarded by almost all the belligerents up to the present time. The object of this article is to sum up the chief points of a discussion of the subject 'which seems to have arrived at a state of saturation'.] **R. Muir.** 'The Freedom of the Seas.' ['The complete freedom of the seas in time of war, in the extended sense in which that phrase is now being used, ought not, in the interests of Europe, to be set up until the time comes when war shall have been wholly banished; because sea-power, which cannot threaten the independence of its neighbours, ought not to be disarmed against land power, which can. Freedom of the seas in time of peace already fully exists; but it is safe only so long as the chief naval power is held by a State which is not a great land-power.'] Critical Note. **F. Savorgnan.** 'La question jougo-slave.' [Examination of the thesis of some Jugo Slav refugees at Paris in favour of the creation of a great Jugo-Slav kingdom by the joining to Serbia of various adjoining countries.] Book Reviews. [The books reviewed which are on economics are: C. Gini's *Il concetto di "transvariazione" e le sue prime applicazioni* (Rome, 1916); C. Gini's *L'ammontare e la composizione della ricchezza delle nazioni* (Turin, 1914); H. F. Secrétan's *La population et les moeurs* (Paris, 1913); A. L. Bowley's *The Nature and Purpose of the Measurement of Social Phenomena* (London, 1915); J. Burn's *Vital Statistics Explained* (London, 1914); J. Riesser's *Préparation et conduite financières de la guerre* (Lausanne and Paris, 1916); G. Jèze, J. Barthélemy, C. Rist, and L. Rolland's *Problèmes de politique et finances de guerre* (Paris, 1915); A. L. Bowley's *The Effects of the War on the External Trade of the United Kingdom* (Cambridge, 1915); F. A. Woods and A. Baltzly's *Is War Diminishing?* (Boston and New York, 1915); and P. Otlet's *Les problèmes internationaux et la guerre* (Geneva and Paris, 1916). Review of Reviews. Chronicle. French translations of articles in Italian and English Series ii. Vol. xxi. May, 1917. **A. C. D. Crommelin.** 'Are the Spiral Nebulae External Galaxies?' **B. Cabrera.** 'Les propriétés magnétiques et la structure de l'atome.' **F. Bottazzi.** 'Le attività fisiologiche fondamentali. Terzo articolo: L'attività secretiva.' **C. Thalbitzer.** 'Les problèmes financiers les plus fondamentaux qui se présenteront aux États belligérants après la guerre.' **F. V. N. Beichmann.** 'L'établissement d'un Tribunal international permanent.' Book Reviews. General Review. 'Histoire des sciences.' **A. Mieli.** Études anciennes et récentes d'histoire de la chimie.' Review of Reviews. French translations of articles in English and Italian. Series ii. Vol. xxi. June, 1917. **Sir F. W. Dyson.** 'The Determination of Stellar Distances.' **Mario Betti.** 'Il problema della transformazione della materia, dai tempi antichi ad oggi.' ['Anaximander taught that the principle of all bodies is a subtle, indefinite (ἄπειρον), and ethereal matter which penetrates everything,' and comparatively modern science, with Helmholtz and Kelvin, has returned very much to this point of view.] **H. Delacroix.** 'Le mysticisme et la religion. I^ère^ Partie: Extension et nature du mysticisme.' [Examines the fundamental psychological characteristics of mysticism; in a second part of this article the author will pass to an examination of its relations with religion.] **A. Landry.** 'La politique économique internationale après la guerre.' **T. J. Laurence.** 'Les effets de la guerre sur le Droit international.' Critical Note. **S. Jankelevitch.** 'Études classiques et études scientifiques.' [A review of recent British discussions of science and classics in education. Some reasons are given why classical studies should be assigned a place which is not negligible.] Book Reviews. Review of Reviews. Chronicle. [There is an interesting account of a meeting of the Italian Society for the Advancement of Sciences at which is emphasised the importance of collaboration between the nations of the Entente in scientific and philosophic literature and international organisation of this literature.] French translations of articles in English and Italian.

X.—NOTES.

MIND ASSOCIATION.

THE Annual Meeting of the Mind Association will be held on Friday, 5th July, at 5 p.m., at University College, Gower Street, W.C. The following series of Joint Meetings of the Mind Association, the Aristotelian Society, and the British Psychological Society have been arranged for the week-end. They will be held at the Hall of the University of London Club, 21 Gower Street, W.C. 1.

Friday, 5th July (at 9 p.m), "Space-Time," Prof. S. Alexander.
Saturday, 6th July (at 10 a.m.), Symposium: "Are Physical, Biological, and Psychological Categories Irreducible?" Dr. J. S. Haldane, Prof. D'Arcy W. Thompson, Dr. P. Chalmers Mitchell, and Prof. L. T. Hobhouse.
Saturday, 6th July (at 2.30 p.m.), Symposium: "Why is the 'Unconscious' unconscious?" Dr. Ernest Jones, Dr. W. H. R. Rivers, and Dr. Maurice Nicoll.
Sunday, 7th July (at 2.30 p.m.), Symposium: "Do finite individuals possess a substantive or an adjectival mode of being?" Dr. Bernard Bosanquet, Prof. A. S. Pringle-Pattison, Prof. G. F. Stout, and Lord Haldane.
Monday, 8th July (at 2.30 p.m.), Short Communications on Special Problems.

Members of the Aristotelian Society will receive copies of the papers in the ordinary way. Members of the Mind Association who intend to be present and who are not members of the Aristotelian Society can obtain copies by application to the Secretary of the Aristotelian Society (Prof. G. Dawes Hicks, 9 Cranmer Road, Cambridge). The applications should be received on or before 15th June. It is hoped that arrangements may be made for the accommodation in the same building of all who come up specially from the country. Full particulars will be announced later.

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—THE RELIGIOUS PHILOSOPHY OF PROFESSOR PRINGLE-PATTISON.

By Dr. H. Rashdall.

I have long entertained a sincere respect and admiration for the works of Prof. Pringle-Pattison. His "Hegelianism and Personality" has always seemed to me the best expression of the objections which I have felt and endeavoured, in teaching and writing, to urge against the kind of "Hegelianism" which was dominant in Oxford when I was an undergraduate, and when I first began my work as a teacher. That fact makes me the more anxious to offer some reply to the criticisms with which he has honoured me in his new book, *The Idea of God*. Without claiming that there is no difference between us, I cannot but think that the Professor has somewhat exaggerated the extent of the divergence. There is hardly one of the objections which I have been in the habit of urging against the Metaphysic of the late Prof. Green, of Mr. Bradley, or of Prof. Bosanquet which I do not find more or less definitely expressed — and no doubt in many cases much better expressed — in Prof. Pringle-Pattison's new book. Though he would probably not object to be called an "Absolutist" himself, I rejoice that an antagonist has at last arisen to the mode of thinking which Prof. Bosanquet and Mr. Bradley have done so much to propagate, an antagonist who can both appreciate the strength of their position and hold his own on equal terms against them. This makes me the more regret that, while not actually misrepresenting me (a favour which one can rarely acknowledge in philosophical criticism), he should have, I think, formed, and conveyed to his readers, a somewhat misleading impression of the position which I have endeavoured to defend. While I shall confine myself for the most part to answering the Professor's direct criticisms, I can hardly do this without to some extent dealing with other differences between his point of view and mine. Without of course actually committing myself to all his positions, it may be assumed that I am in agreement with his general attitude except where I express dissent. This statement may perhaps render it easier for readers of the book to appreciate the points on which I differ without my attempting to summarise the large area which is common ground between us.

(1) Prof. Pringle-Pattison has not noticed anything that I have written in defence of the position usually known as "Idealism," but there is probably here some considerable difference between us. His own position in the old controversy between Realism and Idealism is a very balanced one. If compelled to choose a side, he would probably prefer to be called a Realist, or to call himself an Idealist while professing that most of those to whom that appellation is usually applied are guilty of the anathematised heresy of "subjective Idealism," or, as he calls it, "Mentalism". Nevertheless it would be possible to quote passages which seem to me to express the whole truth of Idealism. Such a passage is the following:—

"Externality, *i.e.*, the general system of nature, cannot be really separated from the foci in which it finds expression; to make this separation, as we argued in the first course, is to hypostatise an abstraction. . . And the abstraction may help us to realise, by force of contrast, that a being which exists in any degree *for itself*, as a conscious subject, rounds itself thereby to an individual whole, and acquires in so doing an independence which we should not attribute to a mere object" (p. 285).

Prof. Pringle-Pattison is here speaking, it is true, of "finite centres" of consciousness. But what he says must obviously be true in an eminent degree and *a fortiori* of the relation between matter and the supreme Mind: and in the above statement there is contained, as it seems to me, the whole truth which Idealists have sought to express by such phrases as "The mind makes nature" or "The world exists in and for the Mind of God," or, "God must be thought of as a Mind which creates the objects of its own thought". And here Prof. Pringle-Pattison differentiates himself quite sharply from such "Realists" as Mr. Bertrand Russell or

Dr. Moore, Mr. Prichard or the American authors of "The New Realism". Upon Prof. Pringle-Pattison's view it is clearly impossible that at any time it could have been said with truth, "There is nothing in the world but matter, whatever there is going to be," or, "Matter exists in and by itself". Nevertheless, Prof. Pringle-Pattison does not emphasise this side of the matter as much as he might have done, and at times (as it seems to me) seems, in his anxiety not to make the physical world a mere sham or delusion or purely subjective experience, to be timid in following out the consequences of his own thought. He would probably accuse me of 'Mentalism'. The truth is that the controversy over "the reality of the external world" has, for those who have grasped the fundamental truth expressed in the above quotation, resolved itself into a question of emphasis. In this matter Renan's dictum holds: "truth lies in the nuances". To my mind Prof. Pringle-Pattison emphasises the reality of the object a nuance or two too much, and under-emphasises the impossibility of subject without object. I prefer such a statement of the matter as may be found in Prof. Bosanquet's lecture "Mind and its Object". This will have some importance for the matters in actual controversy between us.

(2) The main difference between Prof. Pringle-Pattison and myself lies in his conception of the relation between "finite centres" of consciousness and the supreme Spirit whom he calls indifferently the Absolute or God. According to him, the Absolute includes all the finite spirits: in my view it is meaningless to speak of one consciousness as "included in" another; if God is conscious at all, and man (or any other animal) is conscious, man cannot be part of God: hence God by Himself is not the Absolute, and if we must talk about the Absolute at all (I should prefer myself to speak simply of "the Universe" or "the Whole") it is not God alone but God and the "finite centres".[1] This involves to Prof. Pattison the awful heresy of a "finite God" (I have never myself used that expression without a good deal of qualification) though he is good enough to acquit me of the still more awful charge of "Pluralism" in virtue of my distinct assertion that "finite spirits" must be supposed to have a beginning. The Professor might be disposed to quarrel with me for thus speaking of "spirits" as if they existed in-

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[1] The word 'and' will probably be objected to in some quarters. I need hardly say that I do not regard the relation between God and the centres or between the lesser 'centres,' as one of mere juxta-position. They form a society or (if you please) an 'organism'.

dependently of the physical world. But for the present purpose there is really no difference between us on that point. More strongly than he does, I disbelieve in the existence of an object which exists otherwise than for a subject; and therefore, so long as we avoid any Spinozistic attempt to resolve subject and object into some higher entity which is neither, I have no objection to saying "the material world is not outside God". And when we come to the relation of God to the finite spirits, I believe that the difference is rather one of expression than of substance. Prof. Pringle-Pattison has repudiated the attempt to make the individual a mere "appearance" of the Absolute, and equally so the more moderate expressions of the same fundamental (I can hardly help adding the epithet "brutal") contempt for the individual which pervades the writings of Prof. Bosanquet. He is equally free from the vague confusion between the individual and the "universal Self-consciousness" which he criticises in the writings of T. H. Green. He would, I am sure, refuse to echo Lord Haldane's dictum that the word "mind" should never be used in the plural except by way of metaphor. I could not wish for a better and stronger statement of the reality of the individual than many which are to be found in Prof. Pringle-Pattison's pages. He criticises Prof. Bosanquet's doctrine of the Absolute as "a whole in which all finites blend and are resolved" (p. 281). According to Prof. Bosanquet, he remarks, "the contents or qualities of the different selves are, as it were, shaken up together, and neutralise and supplement one another," and he then proceeds :—

> "But, in fact, the whole conception of blending and merging, as applied to finite individuals, depends on the failure to recognise that every real individual must possess a substantial existence in the Aristotelian sense. Both Mr. Bradley and Prof. Bosanquet, as we saw in the preceding lecture, insist on taking the individual as an adjective, thereby reducing it to a conflux of universals or qualities. But it is a trite observation that no number of abstract universals flocking together can give you the concretely existing individual. To exist means to be the subject of qualities, to have or possess a nature" (p. 282).

And with great insight he points out what is the source of the absurdity in which these eminent thinkers have landed themselves.

> "There is a subtle danger in the term content—a suggestion that the individual is simply a very complex group of universals. But if, as we are agreed, the individual is not to be regarded as put together, so to speak, out of the abstract universal, in the shape of so many qualities, and the abstract particular in the shape of a point of existence, neither

can it be regarded as simply an intricately mingled group of universals—a highly complex adjective. So to think of it is to confound the abstractions of knowledge with the concrete texture of reality; it is entirely to overlook the unity and centrality which is the characteristic of concrete existence, and is what we mean by individuation. Such centrality is acknowledged by our authors in the phrase 'finite centres'. But we have seen how 'precarious and superficial' Prof. Bosanquet pronounces such formal distinctness to be. And when the whole stress is laid on content, the content comes to be regarded as somehow detachable from the centres, and capable of being rearranged and finally shaken up into perfect harmony in the Absolute. As Mr. Bradley puts it: 'We found no reason why such feelings, considered in any feature or aspect, should persist self-centred and aloof. It seemed possible, to say the least, that they all might blend with one another, and be merged in the experience of the one Reality. And with that possibility, given on all sides, we arrive at our conclusion. The "this" and "mine" are now absorbed as elements within our Absolute.'"[1]

I could quote many other passages to the same effect. The only thing which I should wish to criticise in these statements is that the writer seems disposed to attribute no more individuality to a consciousness than to a mere individual "thing"—an attitude which seems inconsistent with that doctrine of degrees of reality in respect of which he identifies himself with the objects of his criticism. He is, indeed, somewhat chary of using the word "Consciousness" at all, and hardly seems to emphasise the essential uniqueness of every consciousness as strongly as appears to me to be demanded by the whole drift of the preceding argument. Still, he quite clearly holds that the individual has an existence which, no matter how much derived from and dependent upon that of the supreme Spirit (I use this term to avoid at present employing either the term 'Absolute' or the term 'God') is not in any way to be resolved into and treated as a mere phase or aspect of that Spirit's existence. This view of the individuality of 'finite centres' would seem to me to carry with it a similar or rather, if you like, an increased degree of reality or independence for the supreme Spirit. How far does Dr. Pringle-Pattison admit this consequence? It is difficult to suppose that he regards the supreme Spirit as being a mere collection or aggregate or again as a *mere* Universal, having no real existence at all except in the finite centres. Distinctly, though not quite as distinctly as I could wish, he indicates that he does think of God as a consciousness: he seems to imply that the Absolute is a self (p. 271); and quite certainly he has the courage—in the teeth of philosophic prejudice—to speak of God as a Person with less than the usual amount of apology for such abject anthropomorphism. He expressly speaks of God as an "experience," and it is made pretty clear that he does not think of that experience as merely an ideal or *ens rationis* having no real existence except in so far as it is realised in individual minds. He criticises Green for reducing God to the mere form of self-consciousness. Above all his strong assertion of the existence of moral qualities in God implies all that a plain man or a plain Theologian means when he speaks of God as "consciousness" or "mind".[1]

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[1] *The Idea of God*, pp. 283-284.

If we assume that such is the Professor's meaning, we must ask "in what sense then can such a mind be said to 'include' other minds?" Dr. Pringle-Pattison very emphatically asserts that it does: but he has done nothing to make the idea more intelligible to those to whom such an assertion seems as absurd and self-contradictory as to say, "squareness is red, or roundness is blue". At bottom I believe he is misled by the very tendency which he criticises in others—the tendency to confound "content" of knowledge with the consciousness which has or knows this content. Because the content of knowledge which exists in fragments and confusedly in "finite centres" must be supposed to exist entire and distinct in the "perfect experience," therefore he assumes that the finite centres which have these fragmentary experiences exist in and form part of the Being which has the "perfect experience". No one has pointed out this confusion more clearly than Prof. Pringle-Pattison. And yet that confusion is the real basis of the language which the Professor still goes on using about an 'all-inclusive Deity,' an 'Absolute Mind' which includes the 'finite centres,' a 'Universal' which includes the particulars. In the passages just quoted all that he asserts is an 'identity of content which binds the selves together as members of a Universe'. But he has told us himself that a self or a person is not a mere element of content, a logical combination of universals; and that God is a person. There is, therefore, it would seem, a self-conscious Mind which is other than the finite centres. And yet the finite centres form parts of the Whole. He admits the uniqueness of my particular experiences: if they are unique, they must, it would seem, fall outside the supreme Spirit, and yet they fall within the Whole. The supreme Spirit may know what those experiences are, may even, if you like, know them "from the inside," may have similar experiences Himself, but my experience is not His experience, or part of it. If so, this supreme Consciousness is not the Whole, and *in that sense* is finite. I do not care about that word, because its associations are misleading, and because there are many senses in which the supreme Spirit may well be described as infinite. But it seems to me that Prof. Pringle-Pattison is compelled by the logic of his own position to admit that in the strict philosophical sense of the word the supreme consciousness is not infinite. And yet there must undoubtedly be an Infinite—a Whole, outside which there is nothing. The best way of representing this position seems to be not to call God the Absolute, but to say (as I have done) that the Absolute is not God alone but God together with the 'finite centres'.

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[1] It is true that there are expressions which I find it hard to reconcile with this interpretation, *e.g.*, the statement that "the divine life is, in short, the concrete fact of this inter-communion" (p. 388). So again, when he speaks of "the fallacious character of any direct argument from the conditions of knowledge to the theorem of an All-Thinker and of the universe as the system of his thought" (p. 199) it seems as if he contemplated the possibility that those parts of the Universe which are not known to any finite thinker are not known to any Mind whatever. So again, "the presence of the Ideal is the reality of God within us" (p. 246). Does this mean that God is *merely* the Ideal in us? In spite of these passages, however, I cannot suppose that Prof. Pringle-Pattison's God is an Absolute which has no existence except in finite centres. So to understand him would be to make absolutely meaningless all that he says about 'the sense of a divine compassion' and a 'divine sympathy'.

Prof. Pringle-Pattison commits himself to the, to my mind, unthinkable doctrine of a Mind which includes all minds. And yet after all (so difficult is it to penetrate to the real thought which underlies the words of a philosopher, especially when he is repeating the orthodox phraseology of a school) I very much doubt whether at the bottom of his mind he really does hold the doctrine which I in my doubtless "crude" and "popular" way have tilted against. Here is Prof. Pringle-Pattison's own statement: it is rather characteristic of his method that, while the orthodox statement is embodied in the text, the fatal admission is relegated to a note:—

> "In the concluding pages of *Hegelianism and Personality*, I have many times regretted, in view of the interpretations put upon it and the applications made of it, my use in these pages of the term 'impervious' to describe the nature of a self or personality. The exclusiveness of the self, especially in its relations to the divine, was, I have little doubt, too strongly emphasised in my argument. But the obnoxious term has to be understood in the context in which it occurs. The argument was directed against the fusion of real selves in a logical universal or (to put it in a frankly spatial metaphor) the identification of all selves at a single point of being. What I emphasised, as against this attempt, was the uniqueness of each self. I took the self, and I still take it, as the apex of the principle of individuation by which the world exists. Hence the phrase that each self is 'impervious'—not, it may be observed, to all the influences of the universe but 'to other selves'—'impervious in a fashion of which the impenetrability of matter is a faint analogue'. In other

words, to suppose a coincidence or literal identification of several selves, as the doctrine of the Universal Self demands, is even more transparently self-contradictory than that two bodies should occupy the same space. Apart from crudity of expression this still seems to me obvious, and it may be considered to underlie the argument in several of the preceding lectures. But I trust there is now more justice done to the identity of content which binds the selves together as members of one universe.[1]

I have asserted nothing but what Prof. Pringle-Pattison here finds "obvious,"[2] and what, in my view and in Prof. Pringle-Pattison's, is distinctly denied by such writers as Edward Caird, Mr. Bradley and Prof. Bosanquet.

Prof. Pringle-Pattison is at times willing to accept the statement that God creates the finite centres (p. 292). He has withdrawn the statement made in an earlier work that selves are 'impervious,' a term for which (like the kindred term 'impenetrable') I have no affection: but at times it would seem as if all that he means by including the created selves in the being of the Creator is that, while "finite beings know one another from the outside, as it were," "there can be no such barrier, we may suppose, between the finite consciousness and the Being in which its existence is rooted. It must remain open and accessible—it must enter into the divine experience in a way for which our mode of knowing hardly furnishes us with an analogy" (p. 293). I have nothing to say against such a statement; but, if, as the Professor admits, we cannot understand such a relation, what right has he to say that the knowledge is not 'external,' and is internal in such a sense that the knower is part of, or wholly included in the known? Why make an assertion admitted to be unintelligible? Does it tell us anything more about the relation of God to man that the biblical statement that God created man (and is, so far, different from man), and created him in His own image, *i.e.*, that there is a certain community of nature between God and man? I have no objection to Green's favourite expression that the finite centres are "reproductions in limited modes of the Universal Self-consciousness"—only I should emphasise the 're' as much as the 'production'.

To some minds—perhaps to Prof. Pringle-Pattison's—there is something shocking in denying infinity to God; because traditional Theology has decreed that God must be called infinite: and my critic would perhaps be disposed to invoke "religious experience" as a witness against my position: but he must know very well that neither the ordinary religious person, nor the Theologian uses the term 'infinite' in the sense in which he and other philosophers use it. No religious mind thinks of itself as part of God, except a few, for the most part avowedly unorthodox, mystics. Even they generally think of identification with God as a goal or aim not yet actually achieved, bearing witness to the fact that most individuals are not at present identical with God. And how is this identification to be reconciled with Prof. Pringle-Pattison's own statement that "it takes two to love and to be loved, two to worship and to be worshipped" (p. 289)? Does he suggest that when the worshipper has accomplished the object of his prayers and his strivings, he will love and worship no more? This is surely not the idea of any Christian mystic. In other connexions Prof. Pringle-Pattison shows himself alive to the fact that orthodox Theology has borrowed the language of a Philosophy which does not represent its real convictions. It would be possible to quote plenty of protests from all kinds and schools of orthodox Theology—including ancient Fathers of strongly platonising tendencies—against the idea of such an inclusion in the Deity as Prof. Pringle-Pattison postulates. And it is important to note that the sense in which popular Theology is most attached to the term 'infinite' is one in which the Professor himself denies infinity to God. What the popular mind usually means by 'infinite' is 'infinite in power'. Prof. Pringle-Pattison's God is not only not 'Omnipotent': he is not even potent. But to this I shall return in a moment. The position I have adopted is one which does not deny any degree of dependence upon, or closeness of union with God which anyone likes to assert, so long as 'union' or 'communion' is not understood to mean identity or inclusion. I could adopt almost all that Dr. Pringle-Pattison asserts on this head. I should indeed in one respect go further than he does in denying independence to the individual soul. Though he repudiates 'indeterminism,' he seems to claim for the individual "free-will" or "freedom of choice" in a sense which is practically identical with the popular signification of the term. To God he absolutely denies "freedom of choice": he allows it to man, in a sense which seems to me to deny all that either Theology or common observation tell us about the laws of heredity. I cannot but feel that there are serious ambiguities in what Prof. Pringle-Pattison asserts on this head, but as he has not criticised me on this question, and as the subject is one which cannot be dealt with briefly, I will say no more on that topic.

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[1] *The Idea of God*, pp. 389-390, note 3.

[2] *Cf.* also his criticism on Prof. Bosanquet on page 261. So again on page 264 he declares that "finite centres may 'overlap' indefinitely in content, but *ex vi termini*, they cannot overlap at all in existence; their very *raison d'être* is to be distinct and, in that sense, separate and exclusive focalisations of a common universe. It is not conceivable, of course, that Prof. Bosanquet means to deny such a commonplace."

It seems then that Prof. Pringle-Pattison does not really believe the doctrine which I repudiate, though he persists in using the traditional language of that doctrine. And here I must confess that in this matter I experience precisely the feeling which he himself acknowledges in reading Prof. Bosanquet—" the hopeless kind of feeling which so often oppresses us in philosophical controversy—a sense of despair at seeing the one party accumulating proofs, and reiterating assertions, of what it has never occurred to the other to deny " (p. 272).

(3) I now pass on to a point on which the difference between us is serious, though not so great as my critic imagines. Prof. Pringle-Pattison absolutely denies efficient causality to God : and he is inclined to ridicule me for suggesting that Hegel's doctrine " without the world, God is not God " presents to me the picture of " God as perpetually annexed by some unintelligible fate to a world quite alien to His own inner nature as to some Siamese twin from whom He would perchance, but cannot part " (p. 387). The reader of Prof. Pringle-Pattison's quotation would not perhaps gather that my remark occurs in a criticism not directly of Hegel (still less of Prof. Ward who adopts the saying) but of Green's conception of the relation between God and the world. Now the gist of this criticism is very much the criticism which the Professor himself has constantly urged against Green. Green reduces God to a purely knowing consciousness. He thinks of God in terms of Mind, but never of Will.[1] In spite of occasional vague references to final causes, his usual way of speaking about the relation between God and the world seems to banish the idea of Purpose altogether from his conception of God, and indeed from the Universe except in so far as the purpose is that of finite selves. Against this attitude Prof. Pringle-Pattison frequently polemises. His vindication of Teleology is indeed the gist of the whole book. He attacks not merely the leaving out of Purpose from our conception of the Universe as a whole, but even the mode of thinking which (as in Prof. Bosanquet),[2] while nominally admitting it, practically tends to reduce the Universe to a mechanism, or to resolve all causality into ' systematic connexion '. He

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[1] This is dogmatically denied by Prof. Bosanquet, *The Principle of Individuality and Value*, p. 372. It would be more to the point if he would indicate where Green has recognised that the Absolute is Will.

[2] Prof. Bosanquet admits purpose within the Whole (*e.g.*, in biological phenomena) though not a purpose *of* the Whole.

insists strongly that we must include in our conception of Purpose the idea of conation; contends that the idea of conation implies that of satisfaction or value (pp. 334-337), and holds that "in an ultimate account of things, the logical criteria themselves—completeness, harmony, coherence, any terms we like to use—imply, as much as any ethical or æsthetic criterion, the reference to a conscious experience appreciative of value" (p. 337). He quite definitely attributes Will to God or the Absolute. In a criticism upon Spinoza he says:—

> "And yet there is a danger in Spinoza's denials; for although the discursive and scheming intellect is rightly denied, intelligence in some larger, directer form—of which we may have hints and anticipations in our own experience—must be affirmed, if we are not to treat that which is highest as lower than ourselves, and to assimilate it to unconscious nature. And with intelligence goes will, not as a meaningless freedom of choice but in the sense of continuously affirming and possessing one's experience, which is the characteristic, or at least the ideal, of the self-conscious individual. So far as Spinoza appears to deny these characteristics to his ultimate Individual, he abandons the principle of interpretation by the highest we know, and in that case, or so far as he does so, necessity, even the necessity of the divine nature, tends to suggest not the inwardly affirmed movement and rhythm of a concrete experience or life, but a kind of abstract destiny imposed on the universe. It is the idea of the divine necessity as a self-affirmed life, and not as a blind force acting within the universe like a fate which it undergoes, that constitutes the differentia between a theistic and a non-theistic doctrine.
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> "The terms we have just used, however, do not carry us, of themselves, beyond the contemplative felicity of Aristotle's eternal thinker. But if we revise our idea of perfection—if we keep in view the conclusion to which we were led in the two preceding lectures, and definitely abandon the conception of God as a changeless and self-sufficient unit—the movement to the finite and the realisation of the infinite in the finite must be taken as the fundamental character of the divine life. And if so, what term could be devised more fitting to describe the relation of the time-world and its process to the divine totality than to speak of it as 'the eternal purpose' of God? Like every term of our mortal speech, it retains the associations of time. The end appears as a "far-off divine event" —a consummation delayed, and beyond doubt the finite point of view cannot be transferred literally to an Absolute Experience. But so far as the ideas of process and ultimate achievement embody the conception of effort—nay, of *difficulty*—they may be accepted as truer to the great Fact of the universe than the language even of a philosopher like Hegel when he speaks of the Absolute Life as the eternal play of love with itself. In short, *if the finite world means anything to God*, the ideas of activity and purpose are indispensable. If he is not himself active in the process, he is no more than the Eternal Dreamer, and the whole time-world becomes the illusion which many absolutist systems pronounce it to be."[1]

The system here attacked is the system of the Universe which I have criticised. Dr. Pringle-Pattison does not attribute it to Green, but he does attribute it to Prof. Bosanquet.

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[1] *The Idea of God*, pp. 339-341.

If it is attributable to Prof. Bosanquet, it might *a fortiori* be ascribed to Green, who does not recognise Teleology even to the extent to which it is recognised by Prof. Bosanquet. That being so, it seems to me that Dr. Pringle-Pattison might very well have adopted my comparison of Green's Universe to the Siamese twins. At all events what he says against Green, against Spinoza and against the Spinozistic tendency in Prof. Bosanquet, expresses just the point which in my doubtless blundering and anthropomorphic way, I intended to make against Green. My words were not directed against the Welt-anschauung expounded by Prof. Pringle-Pattison: for Prof. Pringle-Pattison distinctly recognises that God is Will. And yet after all he denies to Him causality.

How we can have creation, will, activity without causality, it is not given to all of us to apprehend. Prof. Pringle-Pattison will probably say, 'What I deny to God is not causality, but efficient causality'. What sort of causality he does recognise in God, is not so apparent. The drift of his argument might lead us to suppose that he would not object to attribute to God final causality. But after all what do we know of final causality without efficient causality? The only way in which we can understand how an end which is still in the future can cause the means which lead up to that end is by supposing that the end is actually present to the Mind which aims at and wills both the end and the means. And that is what we actually experience in volition. If Prof. Pringle-Pattison is going to be serious with his doctrine that God is to be thought of as Will, that He purposes, that He is active, one would suppose that he must think of the relation between God and the world in the same way. His refusal to do so is the more remarkable inasmuch as he accepts what I believe to be the truth about causality—that the only sort of real causality which we know anything about is the causality of Will.

"Activity, as I am now using the term, is the characteristic of the living and the conscious being alone; any application of the term, or any transference of the associations, to the happenings of physical nature and the causal relations between one phenomenon and another is rightly branded as anthropomorphism. . . . The facts of life and of mind cannot be truly described, in short, except teleologically, that is to say as activity directed towards some end" (p. 357). It is true that he goes on to insist that "the end may be 'in' the creature rather than consciously present to it". Certainly that must be the case in the kinds of activity which we recognise in the lower living creatures. **But if** this is the way in which **he** would propose to think of activity in the Divine Mind, if he is going to make the purposiveness of the Divine Mind unconscious, he is not faithful to the principle which he adopts as the fundamental principle of his Philosophy—the principle that the lower can only be explained by the higher, and that we ought to think of God in the light of the highest kind of existence which is immediately known to us. This is the principle in virtue of which he braves the wrath of the conventional philosopher and describes God as a Person. Must not the principle carry with it the application to God of the same kind of causality that we are conscious of in ourselves?

I find it very difficult to account for what seems to me the fundamental inconsistency in Prof. Pringle-Pattison's thought. Up to a certain point he follows the drift of what seems his own real thought, and seeks to understand the relation of God to the world in the light of our highest human experience. Then at a certain point he suddenly stops short, and falls back upon an attitude which is natural enough to Green, to Mr. Bradley, to Prof. Bosanquet, but which seems open to the criticisms which he has himself used against those thinkers. The only consideration which may perhaps throw some light upon this hiatus in Prof. Pringle-Pattison's Metaphysic is that after all his Idealism was, as we saw, not complete or thoroughgoing. After having stated with admirable clearness the central truth of Idealism—that the idea of an object without a subject involves an impossible abstraction, he still talks about the 'independent existence of the object'. If the Professor had recognised as fully as Green, or Mr. Bradley, or Prof. Bosanquet the impossibility of a thing possessing real existence independently of consciousness, then with his own view of a God who is Will as well as Thinker, he could hardly have failed to take seriously the quite orthodox Hegelian conception of a God who wills the objects of his own thought. But with his hesitating attitude on this subject he apparently recoils from the logical consequence of his own doctrines. He has told us that God is Will; but what He wills, does not appear. Not apparently matter: that would involve a position too much like that of the mere Theologian, if matter is thought of realistically, while to think of matter in the sense of the Idealist—as existing only in and for Mind—would strike the man in the street as extravagant, and, for the Professor, would involve a relapse into 'Mentalism'. So God, it would seem, is relieved of all responsibility for the existence of matter and its laws. And yet apparently He does will something. In one place he admits that the origin of finite centres "is, perhaps, the only fact to which we can fitly apply the term creation, for they necessarily import into the universe an element of relative independence and separateness which is not involved in the notion of externality as such" (p. 285), and ends by acknowledging the 'essential mystery of the fact'. If Prof. Pringle-Pattison were a "Theologian," he would probably be accused of invoking 'miracle': but in truth it is something more miraculous than miracle that finite centres should appear at a moment of time, and yet not be caused by anything or any mind already in existence. If God does cause these centres to appear, that surely admits that He exercises an "efficient Causality". But it is surely a very dualistic conception to suppose that the appearance of such centres is not due to the same ultimate source as the happenings of the material world. Such a conception would certainly seem to involve just that interference with Nature *ab extra* which Prof. Pringle-Pattison is elsewhere so anxious to repudiate. That objection would still more apply if it were supposed that God does not will the appearance of the souls but does in some way will events in their subsequent history. If God does not will the events of nature nor the first appearance of souls, nor anything in the life of souls, what is there left for Him to will?

No doubt the philosopher who attempts to think of the relation between God and the world after the analogy of the relation of a human willer to the events which he wills, is employing an analogy which he knows to be wholly inadequate. Some might even describe the analogy as a metaphor, or even a 'symbol'. But the same inadequacy is involved in the attempt to think of God after the analogy of the human thinker, and still more so (as nobody has recognised more clearly than he) in Prof. Pringle-Pattison's own attempt to attribute to God, purpose, will, love. I accept all that he says by way of apology for his own anthropomorphism, and submit that my way of thinking of God as willing all the events of the world demands no more apology than his own conception of God as Will or purposeful Love. I should have no objection to accept the formula: "God is cause only in the sense of ground, that is to say, the Being whose nature is expressed in the system as a whole" (p. 302), if only it is made plain that the 'nature' which is expressed is a conscious, rational and righteous Will, and not a 'system' of thought-relations or a Spinozistic Substance. I can quite understand why Absolutists who treat God only as a Thinker do not speak of Him as causing the laws of nature; I can see no reason why Prof. Pringle-Pattison should object to it. If the 'nature' which the system as a whole expresses be really a Will, surely it is as legitimate to speak of events as caused by that Will as it is to make a similar assertion of acts which express the character of a human being.

(4) There is one particular difficulty in the way of treating God as the efficient cause of the Universe which demands a little further attention. Prof. Pringle-Pattison might urge, and does urge, that efficient causality implies time, and that, unless we are prepared to accept the extremely difficult conception of a creation in time, we cannot think of God as the efficient cause of the successive events which make up the history of the world. One event causes a successive event: but how can we think of a Cause which is not prior to the whole series of events, as causing that series? There cannot be a Cause which is prior to a series which has no beginning. In answer to this difficulty I would make three remarks:—

(*a*) Prof. Pringle-Pattison himself recognises (as we have seen) that physical causality is no true causality, that is to say, causality is, as I should hold, ultimately the same thing as activity. It is true that he does not say, in so many words, that true causality is activity, but such would seem to be the implication of the passage quoted above. If the successive events in physical nature really do cause one another, that is attributing to them "activity" with all the associations of that word. If the events are not really and ultimately caused by the preceding event, by what or by whom are they caused? If Prof. Pringle-Pattison says "By the system as a whole," then he attributes causality to the whole and that is for him the same thing as attributing it to God—in spite of the difficulty involved in attributing causality to a Being which is not thought of as previous in time to each and all of the events in the series. The truth is that when we think of cause as activity, the element of succession in time no longer becomes vital to it. It is true that, since all our experience is in time, it is difficult to get an actual instance of a cause which is contemporaneous with its effect: for of an event in time some of the conditions must necessarily be previous conditions, but we do commonly think of co-temporaneous conditions as *part of* the cause, even when we are speaking in the ordinary language of physical Science and of common life, and think of physical events as really causing each other. Still more, when we think of willed events, they are not necessarily prior to the effect. In attention it may no doubt be said that the state of my mind at one moment is the cause of the succeeding state being what it is: but all the same we do rightly think of my attention as being the cause of my understanding a book that I am reading at the very moment that I am understanding it. True, it is not the whole cause: for if I had not been attending the moment before, I should probably not now understand, but equally I should not understand if I were not now attending. I do not say the analogy is completely satisfactory, but it does, I think, help us to appreciate the possibility of a Cause which causes a series which has not a beginning. The truth is that the difficulty really disappears as soon as we give up the notion that one event really causes another event, and recognise that the true Cause is not an event but an Entity which persists through a succession of events. If Prof. Pringle-Pattison will not admit that the Whole or God is the true cause of the physical events, and yet holds that the only true cause is Will, then it would seem that these events must be uncaused, and moreover that there is no such thing as efficient causality in the Universe. At times he seems disposed to accept Prof. Howison's doctrine that God is not the efficient but the final cause of events (p. 318). If so, the difference between us would diminish.[1] But I confess I cannot understand final Causality without efficient Causality. I should prefer to say that the true conception of Causality is one which includes all that we usually mean by efficient Causality and all that we mean by final Causality: and that the one conception is not fully intelligible without the other. When Prof. Pringle-Pattison speaks of "a continuous manifestation of a single Power," he concedes all that I want—if only any real meaning is given to the word Power. Power is just the element that is banished from the Universe by the theories against which he and I protest.

(*b*) After all I frankly admit that I cannot get over all the difficulties involved in the fact that our experience is in time. The old antinomy remains. We can neither conceive of an endless succession of events—an infinite regress or an infinite progress: nor, on the other hand, can we conceive of a beginning or an end of time. Nobody has illustrated better than Prof. Pringle-Pattison the mistake of the attempt to treat time as merely subjective and illusory after the manner of Mr. Bradley and of most Hegelians. I have little to add to what he has so well said. And yet it seems to me that after all this criticism he disposes of the time difficulty much too easily, and ends by adopting an attitude towards time, which is almost indistinguishable from that of the criticised. After objecting to the term "first" Cause (which I have never used), he continues; "God is cause only in the sense of ground, that is to say, the Being whose nature is expressed in the system as a whole. In other words, God is cause only when *causa = ratio;* for the reason or ultimate explanation of anything is only to be found in the whole nature of the system in which it is included" (p. 302). The statement seems to overlook the fact that the 'system' of the world is a system of successive effects. If God really 'explains' the occurrence of each successive event, why may we not call Him the cause of each such event? The word cause—even the word efficient cause—means precisely that which explains an event in time. The attempt to get rid of the word 'cause' is usually due to the desire to avoid admitting any reality in the succession, or to reduce the laws of physical nature to necessities of thought which God knows indeed but which are no more willed by Him than the equality of angles at the basis of an isosceles triangle can be said to be willed by God. Prof. Pringle-Pattison certainly does not exhibit the first of these tendencies; and in view of his Teleology he ought not to yield to the second. In the absence of such a tendency, his desire to get rid of the word cause seems to be an unnecessary concession to philosophical prejudice. The term "ground" would no doubt do as well, but it is more ambiguous. At all events there is no difficulty in the way of the application of the word cause to God arising from the antinomies involved in the nature of Time which is not equally involved in the attribution of Purpose to the Absolute. All that Prof. Pringle-Pattison says by way of meeting this difficulty, I can heartily accept, but he should be more frank in admitting that the difficulty is really insoluble. Prof. Pringle-Pattison sometimes seems to adopt the usual Hegelian assumption that, when once you have admitted that time cannot be predicated of the Absolute, the difficulty is over. However much you reduce temporal succession to something subjective, an appearance, an unreality, the antinomy is still there. You may suppose that the Absolute contemplates the succession as a whole—eternally contemplates it (a notion which after all implies time), still we must ask "What sort of series does he contemplate—an endless series or a series with a beginning and an end?" The difficulty remains: "An endless series of real events is as unthinkable as a series which has a beginning and an end". Prof. Pringle-Pattison attributes much more reality to time than the "Absolutists" whom he criticises: but yet he seems to deal with the antinomy as if he had "transcended" it: practically in the end he accepts the beginningless and endless series. And yet he has to fall back upon the statement that "the time-process must enter somehow into that experience" (p. 363), *i.e.*, the experience of God. I could quite accept this statement; only I should print the "somehow" in capital letters: and I cannot think Prof. Pringle-Pattison's attempts to explain the difficulty any better than those of the philosophers whom he justly accuses of underestimating the reality of time. After all such attempts to transcend time always means at bottom the admission: "The Absolute knows how to solve the problem, but I don't",

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[1] Since Prof. Pringle-Pattison does not (like Prof. Howison) regard the finite selves as eternal.

Before I conclude, I should like to say a word in more direct reply to the Professor's criticisms upon myself. He quotes the following passage from my *Theory of Good and Evil:* "The Absolute cannot be identified with God, so long as God is thought of as a self-conscious Being. The Absolute must include God and all other consciousnesses, not as isolated and unrelated beings, but as intimately related (in whatever way) to Him and to one another, and as forming with Him a system or Unity. . . . God and the spirits are the Absolute—not God alone. Together they form a Unity, but that Unity is not the unity of self-consciousness" (p. 387);

Prof. Pringle-Pattison continues as follows:—

> "It is true, he protests against the idea of a limitation *ab extra*, by a hostile power or an independent matter; the limitation in question is, in the language of the theologians, a self-limitation. But, as Prof. Ward pertinently says, commenting on this phrase, 'self-limitation seems to imply a prior state in which it was absent, whereas a limitation held to be permanent—as we hold creation to be—suggests some ultimate dualism rather than an ultimate unity'. And if we hold, as Prof. Ward says, that 'God is God only as being creative,' the deceptive *prius* disappears, and with it the wholly inappropriate conception of limitation. This was the gist of our argument in Lecture VII. Why should the creation of finite spirits be treated like a pegging out of claims in a hinterland, by each of which the rights and privileges of the original proprietor are proportionately diminished? Surely the older theologians were right in regarding the existence of spirits not as an impoverishment but as an enrichment of the divine life. The divine life is, in short, the concrete fact of this intercommunion."

If I have ever accepted the Theologian's favourite phrase "self-limitation" (and I have certainly not done so lately), I have accepted it by way of concession, and never without explaining that I mean by it not an act of voluntary self-limitation due to the Will of God, when He might, had He pleased, have willed something else, but an act of Will springing (like all God's volitions) from the necessity of His own nature.

God is eternally limited in power just as He is eternally self-conscious, and cannot help being self-conscious. I do not think a beginning of Matter—of the system of physical nature known to us—is *a priori* unthinkable; though if there were such a beginning, we should still have to think of a series of prior events in time of some other kind, even if they were merely successive thoughts or experiences of the Divine Mind. If the Physicists mentioned by Prof. Pringle-Pattison should be right in the theory that a beginning is required by purely physical considerations, I should be prepared to accept it. But I do not postulate such a beginning. So far as we are justified in forming any opinion on a matter about which we have no direct evidence, I should suppose such a beginning to be extremely improbable. I have always explained that Creation may very well be an "eternal creation". This, I need hardly say, is perfectly orthodox Hegelian language. If there is any difficulty in it, the difficulty exists equally for Prof. Pringle-Pattison's view of a purposive God.

I have already tried to show that Prof. Pringle-Pattison's objection to my refusal to think of finite spirits as included in the Being of God (identified by him with the Absolute) seems to me to rest upon a misunderstanding, because my critic himself does not at bottom treat the actual consciousness of the individual as part of the consciousness of God. The statement that God and the finite spirits together make up the Absolute, seems to me the natural way of formulating what he believes as well as myself. Prof. Pringle-Pattison goes on to make the familiar charge that this involves treating God as 'one of the centres,' or treating the universal as one of the particulars. 'To speak of God in this sense as one of the selves is to justify all the criticisms which treat personality as a limitation inapplicable to the sustaining and containing Life of all the worlds.' This reply, it seems to me, shows that the Professor is really hovering between two totally different and inconsistent conceptions of God. If God is what we ordinarily mean by a logical Universal, then, of course, it follows that He has no existence except in the particulars. If what we call His consciousness is only an element in this 'universal,' that means that His consciousness is merely the aggregate or (to avoid the idea of mere juxta-position) the 'system' of the particular selves, and that there is no divine consciousness outside these centres—just as there is no 'humanity' except the humanity which is present in Plato, Socrates, and other individuals. That part of the content of the Universal which is not realised in one or all of the particulars, or in all of them put together, would not be real at all, and for an Idealist of the Absolutist type there could be no such content. But this is precisely the conception of the Absolute against which the whole of Prof. Pringle-Pattison's polemic is directed. If, on the other hand, he is in earnest with what he says about God being Will, a Person, purposive and righteous, then his criticisms are as applicable to his own position as to mine. I strongly suspect that his distinguished antagonists, Mr. Bradley and Prof. Bosanquet, would endorse this contention. It is a bitter disappointment to me to find that the most formidable criticism which has ever been directed against the School in question should end, if not in capitulating to the enemy, in leaving us with an ambiguous and self-contradictory "idea of God".

I do not think I need say much about Prof. Pringle-Pattison's treatment of the problem of Evil. His criticism upon me is mainly directed against my conception of God as not in the technical sense 'infinite' in the sense that He is not a Whole of which finite spirits are parts. He has nothing to say against my not attributing to Him 'infinite power'. He could not well object to this because when he relieves Him of all responsibility for the laws of nature being what they are, he denies to Him any power at all. From this point of view the difficulty about evil disappears: there is no problem to solve. If God has no more power over the laws of nature than I have, no doubt He is not responsible for evil, and may be perfectly good Himself: but then the doubt arises, "Is He God? except in a sense in which the avowed Dualist may speak of God—a God who is outside of, and possibly antagonistic to, the system of nature?" If the reply is that the laws of nature are parts of the being of God, though not caused by His Will, we must ask "what connexion has this side or aspect of His being with that aspect in respect of which Prof. Pringle-Pattison is content to describe Him as 'eternal Love'"? If he says 'no connexion whatever,' we have an avowed Dualism masked by a merely verbal inclusion of these aspects in the same Being. If he says 'the laws of Nature are such as to make the Universe wholly good, they are expressions of absolute Love,' then the evil must be merely apparent, as is contended by Mr. Bradley and all sound Hegelians. But this is precisely the position against which Prof. Pringle-Pattison's whole book is a protest. If, on the other hand, the laws of nature are such as to realise not, indeed, good without evil, but good on the whole, more good than evil, the greatest good that is really possible, that is practically my position, and that is why these laws can still form part of the nature of a loving Being. It would be absolutely identical with my position, if he would only be content to say that these laws of nature express the Will as well as the 'Nature' of God. When the Professor formally refuses to say this, he leaves us with the old difficulty in which I have already sufficiently insisted : God, according to Prof. Pringle-Pattison, is Will as well as Thought ; but what does He will if He does not will the laws of nature and all that happens in consequence of them ? If the laws of nature express the 'nature' of God, and Will is part of that nature, then surely God wills them. And if He wills laws which involve so much evil because we could not get the good without them, His Power is finite.

This difficulty reaches its climax when the Professor expresses his sympathy with the Christian (but not technically orthodox) conception of a suffering God. If the sufferings of mankind are not an evil, why should God sympathise or suffer with them ? If He has a will, can He be good, and not will to remove them ? If He wills to remove them, but can only remove them partially and progressively, the power of that Will must be limited : or if His Will cannot do anything at all to remove them (as is sometimes suggested), what becomes of the religious thought of God as the source of moral improvement or salvation ? Indeed, what becomes of religion itself ? At bottom, I feel in reading his book, as a whole, that my view of the Universe is much the same as Prof. Pringle-Pattison's—only, as I venture to think, more candidly and consistently expressed, but from time to time I come across passages which make me doubt whether I am right in attempting to identify Prof. Pringle-Pattison's position with my own. For instance, in the next passage to my last quotation, I read : "The contingence is, in the deepest view, contributory to—or rather an essential condition of—the perfection of the whole" (p. 416). Now on the premisses of Mr. Bradley or Prof. Bosanquet, such a statement would be intelligible enough. If all the value lies in the whole, and individuals dont matter, if perfection is something quite different from moral perfection, if the Absolute is supermoral and the evil in the world is merely apparent, then it is easy to understand that the problem of evil disappears : the misery of the world, to put it coarsely, is good sport for the Absolute, and increases the variety and interest of the world-drama enacted for His (Mr. Bradley would say "its") entertainment. But if the individuals are important, if they are not mere appearances of the Absolute or elements in the only real 'experience,' how can an Absolute be perfect whose nature is "expressed in"—if we may not say "causes"—so many miserable and sinful lives? The only answer that seems to me to be open to Prof. Pringle-Pattison would be to say: "The Absolute, being morally perfect, must Himself regret and suffer from all this individual misery, but He cannot produce more good or less evil than He does without a loss of good on the whole". That is substantially my own answer to the problem of evil. Prof. Pringle-Pattison only avoids giving this answer by falling back into precisely the attitude which he criticises in his distinguished opponents.

I can only account for the inconsistency which seems to me to run through Prof. Pringle-Pattison's thought by supposing that, though less bound to Shibboleths than most philosophers, he still feels it necessary to bow the knee before that Shibboleth of the schools which declares that all complimentary epithets are to be showered upon God, even when they obviously contradict one another. He must be infinite (for to be finite seems contemptible), even at the cost of having Cæsar Borgia treated as part of Him. He must be Omnipotent in the popular sense of the word, although the notion that He could remove the world's evil is pronounced ridiculous. He must be pronounced good, although He does not remove the evil when he could do so. He must be Love, although there is nothing for Him to love except parts of Himself.[1] He must be the Absolute, although the Absolute is the opposite of the relative, and love implies relation. It is supposed by Prof. Pringle-Pattison at all events that "we needs must love"—and therefore be related to—"the highest when we see it". Prof. Pringle-Pattison does not really share the mode of thinking which usually styles itself 'Absolutism,' and which no one has attacked more powerfully than he; and yet he must needs use most of its phraseology, lest perchance he should be set down as an Individualist or a Dualist, or a Pluralist, or a 'popular philosopher' or (still deeper degradation) as a "Theologian"—or be called any of the other bad names which Absolutism has invented for the enemies on whom it tramples with a ruthlessness strongly suggestive of the Absolute in which it believes. All that Prof. Pringle-Pattison has to say against my conception of God as a Being of limited Power is: "It seems strange to find Dr. Rashdall saying in a recent essay on 'The Problem of Evil': we see how individual character is tried and strengthened by the struggle with temptation and difficulty, with evil within and evil without. *But why there should be this conditioning of good by evil we cannot say*" (p. 407). But he has said very much the same thing in other words. "Contingency is written across the face of nature—not in the sense that what happens is not determined by natural law, but in the sense that it appears to be *only* so determined, and cannot, in its detail, be brought within the scope of any rational or beneficent purpose" (p. 415). But is not this saying in effect: "We cannot say why there should be the amount and the kind and the distribution of evil which there actually is"? No doubt his is a more distinguished and philosophical way of saying it; but my way of putting it is more intelligible to the "plain man". Prof. Pringle-Pattison agrees with me in holding that God is a Will whose nature is expressed by the world of matter and finite spirits; but imperfectly expressed, since this world contains evil which cannot be explained by a benevolent purpose, and yet the purpose of the Divine Mind is benevolent. What is this but to say that God has power, but that that Power is limited? He is Omnipotent only in the sense given to that word by St. Thomas Aquinas (and you cannot be more orthodox than St. Thomas Aquinas), in the sense that "He has the power of doing all possible things". Prof. Pringle-Pattison quotes and approves that very definition: so far there is no difference between us. What I find difficult to understand is whether Prof. Pattison's God can properly be said to "do" anything at all, and if so, what it is that He does. But however, this question is answered, God is not, according to him, Omnipotent in the only sense in which I have denied His Omnipotence.

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[1] Of course in the view of the Absolutists they are not merely parts but absorbed into a relationless "experience" in a way which Prof. Pringle-Pattison finds unintelligible.

II.—A GENERAL NOTATION FOR THE LOGIC OF RELATIONS.

By C. D. Broad.

§ 1. The object of the present paper is to offer a consistent system of notation which shall be extensible to relations of any degree of polyadicity. The notation for the logic of relations developed in *Principia Mathematica*, so far as that work has gone, is highly convenient for dyadic relations, which alone have as yet been treated. But it is not readily extensible to triadic and higher relations.

Doubtless these will be dealt with by Dr. Whitehead in the fourth volume, which is to treat of geometry. But the necessity for a satisfactory notation for relational propositions in general is urgent. Work of the utmost importance, such as Mr. Robb's *Theory of Time and Space*, cries aloud for translation into symbolic logic; and I doubt if any great progress in this most promising direction can be made until logic has developed a satisfactory notation for relations of high degrees of polyadicity and for their associated logical functions. For this reason I venture to put forward the following sketch in the hope that it may be at least temporarily useful till Dr. Whitehead publishes the fourth volume of *Principia*.

I am not acquainted with any other attempts in this direction except the notation created *ad hoc* by Whitehead in his *Mathematical Concepts of the Material World* (Proc. Roy. Soc., 1906). This notation, though convenient for its purpose, does not claim to be closely connected with the notation already worked out for dyadic relations.

No special logical or philosophical theory underlies the notation which I offer in the present article, though I believe that the notion of a relational *complex* as distinct from a relational proposition has an important bearing on the theory of judgment.

§ 2. *Complexes and Propositions.*—I begin by distinguishing between relational complexes and relational propositions. Let R be any relation, and, for simplicity, let it be dyadic. Then I denote by the formula $R(x, y)$ what I call a *relational complex.* Suppose that R = the relation of loving, that

x = Smith, and y = Jones; then R (Smith, Jones) stands for what is denoted by the phrase *Smith's love for Jones.* Similarly R (Jones, Smith) stands for what is denoted by *Jones's love for Smith.*

These are clearly not propositions. We *seem* to be able to consider such complexes and to make assertions about them even if we know that Smith does not love Jones, or are doubtful on the point. Take, *e.g.*, the conditional proposition: it would be a good thing if Smith loved Jones. It might be held that this ascribes a predicate to a relational complex without asserting the relational proposition corresponding to the complex.

I propose to symbolise the corresponding relational *proposition* by the formula

R (Smith, Jones)!

The difference between the assertorical proposition: it *is* a good thing that Smith loves Jones, and the conditional proposition: it *would be* a good thing if Smith loved Jones would then seem to be that the first is

R (Smith, Jones)! and R (Smith, Jones) is good

whilst the second is merely

R (Smith, Jones) is good.

Again, it might seem a possible view that ethical predicates always apply to relational *complexes* without regard to the truth or falsity of the corresponding relational *propositions*, and that this is a peculiarity of such predicates. But this, like the question whether relational complexes be in any sense real when the corresponding relational propositions are false, is a philosophical question which need not trouble us for the present purpose. All that we need say for the present is (*a*) that there is a recognisable difference between R(x, y) and R(x, y)!; (*b*) that the question whether ! is wholly logical (*i.e.*, belongs wholly to *objects* of thought), or wholly psychological (*i.e.*, belongs wholly to mental acts), or is something connected with the relation between acts and objects, needs careful consideration; and (*c*) that its connexion with Russell's and Frege's assertion-symbol needs further investigation. It cannot, I think, be identical with the assertion-symbol; for this applies to propositions, whilst ! turns a complex into a proposition.

§ 3. *Complexes and Functions.*—I next wish to point out that R(x, y) is strictly a *function* of x and y in the sense in which *function* is used in mathematics, whilst what Russell calls a propositional function is not in this sense a function at all. *E.g.*, x^2 means the same as *the square of x*, and $x \times y$ means the same as *the product of x by y*, just as $R(x, y)$ might stand for what is denoted by *the love of x for y*.

But a propositional function for Russell seems to mean a proposition whose terms are variables instead of constants. It seems better to avoid the word *function* altogether in this connexion, since, in the strict sense of the phrase, Smith's love of Jones is as much a function of Smith and Jones as x's love of y is a function of x and y. There are really three distinctions to be considered and symbolised both among complexes and among propositions: (i) the definite complex or proposition (Smith's love of Jones—Smith loves Jones); (ii) a variable instance of the same *form* (x's love of y—x loves y); (iii) the form itself. This, I take it, is what Russell symbolises by $\phi\hat{x}$. By propositional function Russell appears to mean sometimes a form and sometimes a variable instance of a form.

I shall symbolise the form of a relational complex involving R by R(– , – , – ,) when there are as many blanks as the relation has degrees of polyadicity. A variable instance of the form can be symbolised by $R(x, y, z)$. A definite individual instance can be symbolised by R (Smith, Jones, Brown). Corresponding to these complex-symbols there will be the propositional-symbols

R (– , – , –) !
R (x, y, z) !
R (Smith, Brown, Jones) !

The term *propositional function* thus vanishes, its work being done partly by forms and partly by variable instances of these forms.

§ 4. *Dyadic Relational Complexes and Double Descriptive Functions.*—There is an adumbration of the notion of relational complexes in *Principia*, vol. i., *38, where 'double descriptive functions' are dealt with. In a sense all the notation here to be proposed is based on this notion. But it is evident that Russell and Whitehead think that only a few relations give rise to such functions. Moreover, the notation there developed only applies to *double* descriptive functions. Now in geometry and in many other regions we need to deal with *multiple* descriptive functions.

My object now is to generalise this notion and apply it (i) to all dyadic relations including the relation ϵ of a member to its class, and (ii) to extend it to relations of all degrees of polyadicity. We will begin with dyadic relations.

I. Relational Complexes and their Associated Functions.

§ 5. *Notation for Dyadic Complexes.*—Let a be a class, and x a variable individual. Then

$\epsilon(x, a)$ denotes x's membership of a.
$\epsilon(x, a)\,!$ denotes $x \epsilon a$.

It is of course clear from à priori considerations that a must be of a type above that of x, and again that $\epsilon(a, x)$ is nonsense.

Let us now leave ϵ for the moment and consider any dyadic relation R whose terms, we will suppose, are individuals. *E.g.* let R = the relation of loving.

Then R(x, y) is the love of x for y.[1]

Now what would R$(x, -)$ be? Let us define this as the relation of R(x, y) to y. (*Cf.* $x \S y$ in *Principia*, when $\S y$ is the relation of $x \S y$ to x.)

Similarly R$(-, y)$ is the relation of R (x, y) to x.

Now consider Russell's $x \S``\beta$. This is the class

$$\hat{u}[(\exists y) . y \epsilon \beta . u = x \S y].$$

I propose to denote this class by the symbol R$(x, ``\beta)$.

Similarly R$(``a, y)$ will be Russell's $\S y``a$.

E.g. R$(x, ``\beta)$ might be the class of x's love affairs with Frenchmen.

R$(``a, y)$ might be the class of the love affairs of Englishmen for y.

Now R$(``a, y)$ is symbolised by Russell not only as $\S y``a$ but also as $a \underset{,,}{\S} y$, and this is done in order that it may in its turn be treated as a double descriptive function. Our notation allows us to do likewise. We see at once that we can derive two new relations from our classes, *e.g.*, R$(``a, -)$ from R$(``a, y)$ and R$(-, ``\beta)$ from R$(x, ``\beta)$. The former might mean the relation of (the love affairs of Englishmen for y) to y, and the latter the relation of (the love affairs, of x with Frenchmen) to x. R $(``a, -)$ is what Russell symbolises by $a \underset{,,}{\S}$. His symbol for my R$(-, ``\beta)$ would presumably be $\underset{,,}{\S} \beta$.

§ 6. *Derivative Classes of Classes.*—From the relation

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[1] Strictly there seems to be a difference between x's love for y, the fact that x loves y, and x's love-affair with y. It would be necessary in any complete treatment to analyse these carefully, and, if they proved to be genuinely different, to establish a different symbol for each. In the present tentative sketch I have treated them as equivalent, and in particular examples have translated R (x, y) into the form of words that seemed most convenient in each case.

$R(-, \text{“}\beta)$ we can get a new class, this time a class of classes. This will be symbolised by $R(\text{“}\underline{\alpha}, \text{“}\beta)$. What will this mean?

$$\begin{aligned} \text{We have } \gamma\epsilon R(\text{“}\underline{\alpha}, \text{“}\beta) \,.\equiv:& (\exists x) \,.\, x\epsilon\alpha \cdot \gamma = R(x, \text{“}\beta). \\ \equiv:& (\exists x) \,.\, x\epsilon\alpha \,.\, \gamma = \hat{u}[(\exists y) \,.\, y\epsilon\beta \,.\, u \\ & \qquad = R(x, y)]. \end{aligned}$$

$$\text{Hence } R(\text{“}\underline{\alpha}, \text{“}\beta) = \hat{\gamma}[(\exists x) \,.\, x\epsilon\alpha \,.\, \gamma = \hat{u}[(\exists y) \,.\, y\epsilon\beta \,.\, u = R(x, y)]].$$

Now why do we write this in the form $R(\text{“}\underline{\alpha}, \text{“}\beta)$ and not simply in the form $R(\text{“}\alpha, \text{“}\beta)$? The reason is this. The relations $R(\text{“}\alpha, -)$ and $R(-, \text{“}\beta)$ are different, and they give rise to different classes of classes. If we do not show which relation we started with we shall end up with $R(\text{“}\alpha, \text{“}\beta)$ in both cases, *i.e.*, we shall have *one* symbol $R(\text{“}\alpha, \text{“}\beta)$ to represent the two different classes

$$\begin{aligned} & \hat{\gamma}[(\exists y) \,.\, y\epsilon\beta \,.\, \gamma = \hat{u}[(\exists x) \,.\, x\epsilon\alpha \,.\, u = R(x, y)]] \\ \text{and} \quad & \hat{\gamma}[(\exists x) \,.\, x\epsilon\alpha \,.\, \gamma = \hat{u}[(\exists y) \,.\, y\epsilon\beta \,.\, u = R(x, y)]]. \end{aligned}$$

We must therefore have some means of distinguishing in the final symbol between the relation with which we started. Accordingly I propose to write

$R(\text{“}\underline{\alpha}, \text{“}\beta)$ for the class corresponding to $R(-, \text{“}\beta)$
and $R(\text{“}\alpha, \text{“}\underline{\beta})$ for the class corresponding to $R(\text{“}\alpha, -)$.

The class $R(\text{“}\underline{\alpha}, \text{“}\beta)$ is Russell's class $\alpha \underset{\text{”}}{\S} \text{“}\beta$.

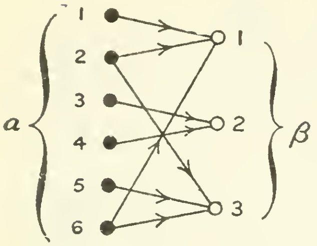
Now since $R(\text{“}\underline{\alpha}, \text{“}\beta)$ and $R(\text{“}\alpha, \text{“}\underline{\beta})$ are classes of classes they will have logical sums. And it is easy to prove the important proposition that

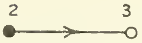
$$s\text{‘}R(\text{“}\underline{\alpha}, \text{“}\beta) = s\text{‘}R(\text{“}\alpha, \text{“}\underline{\beta}) = \hat{u}[(\exists x, y) \,.\, x\epsilon\alpha \,.\, y\epsilon\beta \,.\, u = R(x, y)].[1]$$

We can easily illustrate all these notions by means of a diagram. Suppose, *e.g.*, that there are 6 Englishmen and 3 Frenchmen. Let us represent Englishmen by dots and Frenchmen by circles. Let us represent the love of the Englishman m for the Frenchman n by $\overset{m}{\bullet}\!\!\xrightarrow{\qquad}\!\!\overset{n}{\circ}$. Then we might have the following state of affairs:—

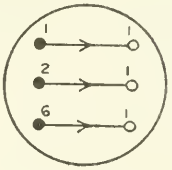
---

[1] Since these logical sums are important and do not depend on the difference between $R(\text{“}\underline{\alpha}, \text{“}\beta)$ and $R(\text{“}\alpha, \text{“}\underline{\beta})$ it will be useful to have a symbol for them. I suggest that $R(\text{“}\alpha, \text{“}\beta)$ be used; it can hardly lead to error.



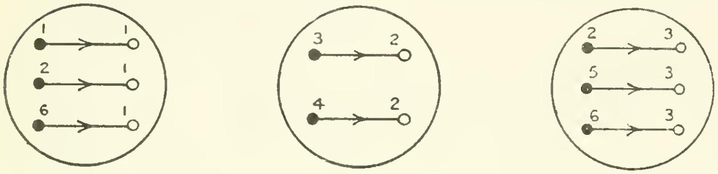
Then (i) 

represents the love of E_2 for F_3.

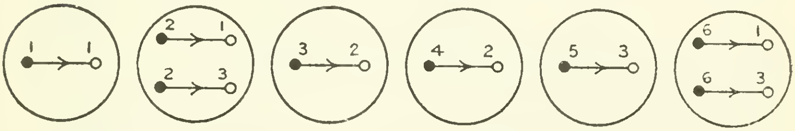
(ii) 

represents the class of loves of Englishmen for F_1, *i.e.*, the class $\mathrm{R}(``\alpha, F_1)$.

(iii) $\mathrm{R}(``\alpha, \underline{``}\beta)$ is the class whose members are the classes.



(iv) $\mathrm{R}(\underline{``}\alpha, ``\beta)$ is the class whose members are the classes.



We see in fact that $\mathrm{R}(``\underline{\alpha}, ``\beta)$ and $\mathrm{R}(``\alpha, ``\underline{\beta})$ are two different classifications of the loves of these Englishmen for these Frenchmen. The first classifies together all loves in which the same Englishman is the lover and the second classifies together all loves in which the same Frenchman is the beloved.

(v) It is clear from these diagrams that

$$s`\mathrm{R}(``\alpha, ``\underline{\beta}) = s`\mathrm{R}(\underline{``}\alpha, ``\beta),$$

and that it is the class of all the eight friendships in which an Englishman loves a Frenchman.

§ 7. *Application to* ϵ.—As these results hold generally of dyadic relations we can apply them at once to ϵ.

For example we shall have $\epsilon(``\gamma, \alpha)$ as the class of memberships in $\alpha$ of members of $\gamma$. Again $\epsilon(x, ``\kappa^2)$—where κ^2 is written to denote the fact that κ must be a class of classes—stands for the class of memberships of x in classes which are themselves members of κ. Lastly we shall have:

$s`\epsilon(``\underline{\gamma}, ``\kappa^2) = s`\epsilon(``\gamma, ``\underline{\kappa}^2) = \hat{u}[\exists(x, \alpha) \,.\, x\epsilon\gamma \,.\, \alpha\epsilon\kappa \,.\, u = \epsilon(x, \alpha)]$.

This is thus the class of memberships of members of γ in classes that are members of κ. I do not suggest that in the case of ϵ these functions are of much practical importance. If we want an example from geometry we can take the relation between two segments h and k which make an angle with each other. Then $\angle(h, k)\,!$ expresses the fact that h makes an angle with k and $\angle(h, k)$ represents the angle which h makes with k.

$\angle(h, \text{“}\beta)$ is the class of angles made by h with segments of the class β; $\angle(\text{“}\alpha, k)$ is the class of angles made by segments of the class α with k; $s\text{‘}\angle(\text{“}\alpha, \text{“}\beta)$ or $\angle(\text{“}\alpha, \text{“}\beta)$ is the class of angles formed by a member of α with a member of β.

§ 8. *Extension to Triadic Relations.*—Conformably to what has been said above a triadic relational complex will have the form $R(-, -, -)$. Let R be the relation of jealousy. Then $R(x, y, z)$ is the jealousy of x for y on account of z; $R(-, y, z)$ is the relation of this jealousy to x, $R(x, -, z)$ is the relation of it to y, and $R(x, y, -)$ is the relation of it to z.

The next point to notice is that a formula such as $R(-, -, z)$ must be rejected as ambiguous on similar grounds to those which made us reject $R(\text{“}\alpha, \text{“}\beta)$. For $R(-, -, z)$ would equally stand for the relation of $R(x, -, z)$ to x and for the relation of $R(-, y, z)$ to y; and these are clearly not identical with each other. If we want to express these relations we must do so by the respective formulæ $R(-, =, z)$, and $R(=, -, z)$. Clearly there will be six such relations, *viz.*,

$$R(=, -, z) \text{ and } R(-, =, z)$$
$$R(=, y, -) \text{ and } R(-, y, =)$$
$$R(x, =, -) \text{ and } R(x, -, =).$$

We could evidently go a step further and consider the relations of each of these to the remaining term in it. Their symbols would be

$$R(\equiv, =, -) \text{ and } R(=, \equiv, -)$$
$$R(\equiv, -, =) \text{ and } R(=, -, \equiv)$$
$$R(-, \equiv, =) \text{ and } R(-, =, \equiv).$$

I shall not attempt to translate these symbols into words. A simplification which suggests itself and which would clearly be useful in dealing with relations of higher degrees of polyadicity is shown below when the above six formulæ are written respectively as :—

$$\begin{gathered} R(\overset{3}{-}, \overset{2}{-}, \overset{1}{-}) \text{ and } R(\overset{2}{-}, \overset{3}{-}, \overset{1}{-}) \\ R(\overset{3}{-}, \overset{1}{-}, \overset{2}{-}) \text{ and } R(\overset{2}{-}, \overset{1}{-}, \overset{3}{-}) \\ R(\overset{1}{-}, \overset{3}{-}, \overset{2}{-}) \text{ and } R(\overset{1}{-}, \overset{2}{-}, \overset{3}{-}). \end{gathered}$$

(Naturally with a dyadic relation we should get

$R(\overset{1}{-}, \overset{2}{-})$ and $R(\overset{2}{-}, \overset{1}{-})$ simply.)

§ 9. *Classes derived from Triadic Complexes.*—From the relations $R(-, y, z)$, $R(x, -, z)$, and $R(x, y, -)$ we at once derive the classes $R(``\alpha, y, z)$, $R(x, ``\beta, z)$ and $R(x, y, ``\gamma)$. These may be illustrated respectively by (i) The jealousies of Englishmen for y on account of z, (ii) The jealousies of x for Frenchmen on account of z, and (iii) The jealousies of x for y on account of Germans.

These classes give rise respectively to the relations

$$\begin{gathered} R(``\alpha, -, z) \text{ and } R(``\alpha, y, -) \\ R(-, ``\beta, z) \text{ and } R(x, ``\beta, -) \\ R(-, y, ``\gamma) \text{ and } R(x, -, ``\gamma). \end{gathered}$$

From these we can obtain in the usual way six classes of classes of relational complexes, *viz.*,

$$\begin{gathered} R(``\alpha, ``\underline{\beta}, z) \text{ and } R(``\alpha, y, ``\underline{\gamma}) \\ R(``\underline{\alpha}, ``\beta, z) \text{ and } R(x, ``\beta, ``\underline{\gamma}) \\ R(``\underline{\alpha}, y, ``\gamma) \text{ and } R(x, ``\underline{\beta}, ``\gamma). \end{gathered}$$

It will be sufficient to illustrate the meanings of the first and third of these.

$$\begin{aligned} \text{We have } \delta\epsilon R(``\alpha, ``\underline{\beta}, z) . \equiv . (\exists y) . y\epsilon\beta . \delta &= R(``\alpha, y, z). \\ \equiv . (\exists y) . y\epsilon\beta . \delta &= \hat{u}[(\exists x) . x\epsilon\alpha . u \\ &= R(x, y, z)]. \\ \text{Again} \quad \delta\epsilon R(``\underline{\alpha}, ``\beta, z) . \equiv . (\exists x) . x\epsilon\alpha . \delta &= \hat{u}[(\exists y) . y\epsilon\beta . u \\ &= R(x, y, z)]. \end{aligned}$$

The first means that you first consider all the jealousies in which any Englishman is jealous of y on account of z, where y is a Frenchman, and then make up a class each of whose members is the class of these jealousies directed at a single Frenchman. The second means that you first consider all the jealousies in which x is jealous of any Frenchman on account of z, where x is an Englishman. You then make up a class each of whose members is the class of these jealousies felt by a single Englishman.

It is evident that $s`R(``\underline{\alpha}, ``\beta, z) = s`R(``\alpha, ``\underline{\beta}, z)$ $= \hat{u}[(\exists x, y) . x\epsilon\alpha . y\epsilon\beta . u = R(x, y, z)]$. It is thus the class of jealousies of Englishmen for Frenchmen on account of z.

§ 10. Our six new classes give rise to six new relations, *viz.*,

$$\begin{gathered} R(\text{“}\alpha, \text{“}\underline{\beta}, -) \text{ and } R(\text{“}\alpha, -, \text{“}\underline{\gamma}) \\ R(\text{“}\underline{\alpha}, \text{“}\beta, -) \text{ and } R(-, \text{“}\beta, \text{“}\underline{\gamma}) \\ R(\text{“}\underline{\alpha}, -, \text{“}\gamma) \text{ and } R(-, \text{“}\underline{\beta}, \text{“}\gamma) \end{gathered}$$

These in turn will give rise to six classes of classes of classes, *viz.*,

$$\begin{gathered} R(\text{“}\alpha, \text{“}\underline{\beta}, \text{“}\underline{\underline{\gamma}}) \text{ and } R(\text{“}\alpha, \text{“}\underline{\underline{\beta}}, \text{“}\underline{\gamma}) \\ R(\text{“}\underline{\alpha}, \text{“}\beta, \text{“}\underline{\underline{\gamma}}) \text{ and } R(\text{“}\underline{\underline{\alpha}}, \text{“}\beta, \text{“}\underline{\gamma}) \\ R(\text{“}\underline{\alpha}, \text{“}\underline{\underline{\beta}}, \text{“}\gamma) \text{ and } R(\text{“}\underline{\underline{\alpha}}, \text{“}\underline{\beta}, \text{“}\gamma). \end{gathered}$$

Let us take the first and last of these as examples. It is easy to show that

$$\begin{aligned} R(\text{“}\alpha, \text{“}\underline{\beta}, \text{“}\underline{\underline{\gamma}}) = \hat{\kappa}[[[(\exists z) . z\epsilon\gamma . \kappa = \hat{\delta}[[(\exists y) . y\epsilon\beta . \delta \\ = \hat{u}[(\exists x) . x\epsilon\alpha . u = R(x, y, z)]]] \end{aligned}$$

and that

$$\begin{aligned} R(\text{“}\underline{\underline{\alpha}}, \text{“}\beta, \text{“}\underline{\gamma}) = \hat{\kappa}[[[(\exists x) . x\epsilon\alpha . \kappa = \hat{\delta}[[(\exists y) . y\epsilon\beta . \delta \\ = \hat{u}[(\exists z) . z\epsilon\gamma . u = R(x, y, z)]]]. \end{aligned}$$

The interpretation of these classes in words would be intolerably tedious and would add nothing to the intelligibility of the notions. But the logical sum of the logical sum of these classes is important.[1]

It is in fact easy to prove that

$$\begin{aligned} s\text{‘}s\text{‘}R(\text{“}\alpha, \text{“}\underline{\beta}, \text{“}\underline{\underline{\gamma}}) &= s\text{‘}s\text{‘}R(\text{“}\alpha, \text{“}\underline{\underline{\beta}}, \text{“}\underline{\gamma}) \\ &= s\text{‘}s\text{‘}R(\text{“}\underline{\alpha}, \text{“}\beta, \text{“}\underline{\underline{\gamma}}) = \ . \ . \ . \\ &= \hat{u}[(\exists x, y, z) . x\epsilon\alpha . y\epsilon\beta . z\epsilon\gamma . u = R(x, y, z)]. \end{aligned}$$

Interpreting this class in words we see that it is the class of jealousies felt by Englishmen for Frenchmen on account of Germans.

§ 11. *Further Extension of Dyadic Complexes.*—We may say that so far we have dealt with classes of complexes obtained from a single relation R by varying the terms within the limits of certain classes $\alpha, \beta, \ldots$ But we might keep the terms constant and vary the relation within a certain class ρ of relations, which must, for our purpose, be assumed only to contain relations of the same polyadicity.

---

[1] This may conveniently and without risk of error be represented by the otherwise meaningless formula $R(\text{“}\alpha, \text{“}\beta, \text{“}\gamma)$.

E.g. let ρ be a class of dyadic relations. Consider the class

$$\delta = \hat{u}[(\exists \mathrm{R}) \,.\, \mathrm{R}\epsilon\rho \,.\, u = \mathrm{R}(x, y)].$$

Let us define a new relation $-\,(x, y)$ as follows:—

$$-\,(x, y) = \hat{u}\hat{\mathrm{R}}[u = \mathrm{R}(x, y)] \text{ Df.}$$

Then, in Russell's notation, $\delta = [\,-\,(x, y)]“\rho$
$= \text{in our notation, } “\rho(x, y).$

We can now proceed to generalise this further by varying x and y.

Clearly $“\rho(\,-\,, y)$ is the relation of $“\rho(x, y)$ to x.
Hence

$$“\rho(“\underline{a}, y) = \hat{\gamma}[[(\exists x) \,.\, x\epsilon a \,.\, \gamma = \hat{u}[(\exists \mathrm{R}) \,.\, \mathrm{R}\epsilon\rho \,.\, u = \mathrm{R}(x, y)]].$$

Whence $s‘[“\rho(“\underline{a}, y)] = \hat{u}[(\exists x, \mathrm{R}) \,.\, x\epsilon a \,.\, \mathrm{R}\epsilon\rho \,.\, u = \mathrm{R}(x, y)]$
whilst $s‘[“\rho(x, “\underline{\beta})] = \hat{u}[(\exists y, \mathrm{R}) \,.\, y\epsilon\beta \,.\, \mathrm{R}\epsilon\rho \,.\, u = \mathrm{R}(x, y)]$.

We must now notice another relation and another class which must not be confused with the foregoing ones. Taking the class $\mathrm{R}(“a, y)$ we can form the relation $-\,(“a, y)$, which is that of $\mathrm{R}(“a, y)$ to R.

From this relation we can get the class of classes $“\underline{\rho}(“a, y)$. Now it is easy to see that

$$“\underline{\rho}(“a, y) = \hat{\gamma}[[(\exists \mathrm{R}) \,.\, \mathrm{R}\epsilon\rho \,.\, \gamma = \hat{u}[(\exists x) \,.\, x\epsilon a \,.\, u = \mathrm{R}(x, y)]].$$

Similarly

$$“\underline{\rho}(x, “\beta) = \hat{\gamma}[[(\exists \mathrm{R}) \,.\, \mathrm{R}\epsilon\rho \,.\, \gamma = \hat{u}[(\exists y) \,.\, y\epsilon\beta \,.\, u = \mathrm{R}(x, y)]].$$

It is evident that $s‘[“\underline{\rho}(“a, y)] = s‘[“\rho(“\underline{a}, y)]$
and that $s‘[“\underline{\rho}(x, “\beta)] = s‘[“\rho(x, “\underline{\beta})]$.

§ 12. We can now consider some new classes of classes of classes.

(i) $\mathrm{R}(“\underline{a}, “\beta)$ produces the relation $-\,(“\underline{a}, “\beta)$
between it and R, and the class $“\underline{\rho}(“\underline{a}, “\beta)$.

(ii) $\mathrm{R}(“a, “\underline{\beta}$ produces the relation $-\,(“a, “\underline{\beta})$
between it and R, and the class $“\underline{\underline{\rho}}(“a, “\underline{\beta})$.

(iii) $“\underline{\rho}(“a, y)$ produces the relation $“\underline{\rho}(“a, \,-\,)$
between it and y, and the class $“\underline{\rho}(“a, “\underline{\underline{\beta}})$.

(iv) $“\rho(“\underline{a}, y)$ produces the relation $“\rho(“\underline{a}, \,-\,)$
between it and y, and the class $“\rho(“\underline{a}, “\underline{\underline{\beta}})$.

(v) $“\underline{\rho}(x, “\beta)$ produces the relation $“\underline{\rho}(\,-\,, “\beta)$
between it and x, and the class $“\underline{\rho}(“\underline{\underline{a}}, “\beta$.

(vi) $“\rho(x, “\underline{\beta})$ produces the relation $“\rho(\,-\,, “\underline{\beta})$
between it and x, and the class $“\rho(“\underline{a}, “\underline{\underline{\beta}})$.

There are six of these classes in all as with ordinary triadic complexes like $\mathrm{R}(x, y, z)$. Of these we will consider (i), (iii), and (vi), which illustrate ρ in different states.

$$
\begin{aligned}
&\text{(i)}\ \text{‘‘}\underline{\underline{\rho}}(\text{‘‘}\underline{\alpha}, \text{‘‘}\beta) = \hat{\kappa}[[[(\exists \mathrm{R}) \,.\, \mathrm{R}\epsilon\rho \,.\, \kappa = \hat{\gamma}[[(\exists x) \,.\, x\epsilon\alpha \,.\, \gamma \\
&\qquad\qquad = \hat{u}[(\exists y) \,.\, y\epsilon\beta \,.\, u = \mathrm{R}(x, y)]]]. \\
&\text{(iii)}\ \text{‘‘}\underline{\rho}(\text{‘‘}\alpha, \text{‘‘}\underline{\underline{\beta}}) = \hat{\kappa}[[[(\exists y) \,.\, y\epsilon\beta \,.\, \kappa = \hat{\gamma}[[(\exists \mathrm{R}) \,.\, \mathrm{R}\epsilon\rho \,.\, \gamma \\
&\qquad\qquad = \hat{u}[(\exists x) \,.\, x\epsilon\alpha \,.\, u = \mathrm{R}(x, y)]]]. \\
&\text{(vi)}\ \text{‘‘}\rho(\text{‘‘}\underline{\underline{\alpha}}, \text{‘‘}\underline{\beta}) = \hat{\kappa}[[[(\exists x) \,.\, x\epsilon\alpha \,.\, \kappa = \hat{\gamma}[[(\exists y) \,.\, y\epsilon\beta \,.\, \gamma \\
&\qquad\qquad = \hat{u}[(\exists \mathrm{R}) \,.\, \mathrm{R}\epsilon\rho \,.\, u = \mathrm{R}(x, y)]]].
\end{aligned}
$$

It is evident that $s\text{‘}s\text{‘}$ [any of these classes] is the same. It may be represented according to our usual convention by $\text{‘‘}\rho(\text{‘‘}\boldsymbol{\alpha}, \text{‘‘}\beta)$. We then have

$$\text{‘‘}\rho(\text{‘‘}\alpha, \text{‘‘}\beta) = \hat{u}[\exists x, y, \mathrm{R}) \,.\, x\epsilon\alpha \,.\, y\epsilon\beta \,.\, \mathrm{R}\epsilon\rho \,.\, u = \mathrm{R}(x, y)].$$

Suppose, *e.g.*, that ρ was the class of rectilinear relations and that, when $\mathrm{R}\epsilon\rho$, $\mathrm{R}(x, y)$ represents the segment on the line R which is terminated by the points x and y.

Let α and β be two planes. Then $\text{‘‘}\rho(\text{‘‘}\alpha, \text{‘‘}\beta)$ is the class of segments of each of which one end is on the plane α and the other end is on the plane β.

Evidently this extension could be applied to triadic and higher relational complexes. But there is no need for us to trouble about this, for enough has been given to show that we have a general notation capable of being applied consistently to relational complexes of any degree of polyadicity.

II. RELATIONAL PROPOSITIONS AND THEIR ASSOCIATED FUNCTIONS.

§ 13. *Definition of the Present Problem.*—We are now going to consider the extension of such notions as Russell denotes by $\mathrm{R}\text{‘}y$, $\mathrm{R}\text{‘‘}\beta$, $\overrightarrow{\mathrm{R}}\text{‘}y$, $\mathrm{D}\text{‘}\mathrm{R}$, and $\check{\mathrm{R}}$. We shall try to establish a system of notation which will (*a*) apply consistently to relations of all degrees of polyadicity; and (*b*) show as much connexion as possible with that already developed above for complexes and their associated functions.

We must remember that our previous notation has applied mainly, not to R or to terms in R's field, but to relational complexes, such as $\mathrm{R}(x, y, z)$, and to classes of these. It is perfectly true that, *in connexion with such complexes*, we have considered special cases of the general notion $\mathrm{R}\text{‘‘}\beta$. *E.g.*, we have considered the class $\mathrm{R}(x, \text{‘‘}\beta, z)$. But the relations with which we then dealt were always of one special kind, *viz.* the relations of complexes to some of their own terms, *e.g.*, the relation $\mathrm{R}(x, -, z)$. Now, although all relations give rise to complexes and hence to relations between these complexes and their terms, it is of course not true that all relations relate complexes to their terms. Most relations relate terms within a complex to each other. Hence a notation which is convenient for relations of the special kind which we have been considering so far will not necessarily be convenient or even possible for relations in general.

We may begin by noticing the following important connexion between relational complexes and relational propositions:—

$$R(x, y, z)! \,.\equiv.\, E!R(x, y, z) \,.\equiv.\, (\exists u) \,.\, u = R(x, y, z),$$

e.g., x is jealous of y on account of z . ≡ . the jealousy of x for y on account of z exists . ≡ . there is something which is identical with x's jealousy for y on account of z.

§ 14. *Extension of* $\overrightarrow{R}$.—$\overrightarrow{R}\text{‘}y$ is defined as $\hat{x}[xRy]$, whilst
$\overleftarrow{R}\text{‘}x$ is defined as $\hat{y}[xRy]$.

Now Russell's xRy is our $R(x, y)!$.

So $\overrightarrow{R}\text{‘}y = \hat{x}[R(x, y)!]$.

Let us denote this class by the symbol $R(\rightarrow, y)$. Then Russell's $\overrightarrow{R}$ is the relation between $R(\rightarrow, y)$ and y, which in our system of notation is written $R(\rightarrow, -)$.

Similarly we shall write Russell's $\overleftarrow{R}$ as $R(-, \rightarrow)$ and his $\overleftarrow{R}\text{‘}x$ as $R(x, \rightarrow)$.

It is now easy to extend the notation to triadic relations. Taking the proposition $R(x, y, z)!$ we shall get the classes

(i) $\hat{x}[R(x, y, z)!] = R(\rightarrow, y, z)$, *e.g.*, those who are jealous of y on account of z.

(ii) $\hat{y}[R(x, y, z)!] = R(x, \rightarrow, z)$, *e.g.*, those of whom x is jealous on account of z.

(iii) $\hat{z}[R(x, y, z)!] = R(x, y, \rightarrow)$, *e.g.*, those on whose account x is jealous of y.

Now each of these will give rise at once to the relations

$$R(\rightarrow, -, z) \text{ and } R(\rightarrow, y, -)$$
$$R(-, \rightarrow, z) \text{ and } R(x, \rightarrow, -)$$
$$R(-, y, \rightarrow) \text{ and } R(x, -, \rightarrow).$$

These in the usual way will give rise to classes of classes. To see what these will be let us take, *e.g.*,

$$R(\rightarrow, \text{‘‘}\beta, z) \text{ and } R(\text{‘‘}\alpha, \rightarrow, z).$$

Then it is easy to see that

$$\mathrm{R}(\rightarrow, ``\beta, z) = \hat{\gamma}[\exists y) \,.\, y\epsilon\beta \,.\, \gamma = \mathrm{R}(\rightarrow, y, z)]$$

and that $\mathrm{R}(``\alpha, \rightarrow, z) = \hat{\gamma}[(\exists x) \,.\, x\epsilon\alpha \,.\, \gamma = \mathrm{R}(x, \rightarrow, z)]$.

E.g., $\mathrm{R}(\rightarrow, ``\beta, z)$ might be the class whose members are classes of persons who are jealous of some Frenchman on account of $z$; whilst $\mathrm{R}(``\alpha, \rightarrow, z)$ might be the class whose members are the classes of persons of whom some Englishman is jealous on account of z.

It can easily be shown that

$$s`\mathrm{R}(\rightarrow, ``\beta, z) = \hat{x}[(\exists y) \,.\, y\epsilon\beta \,.\, \mathrm{R}(x, y, z)!]$$

whilst $$s`\mathrm{R}(``\alpha, \rightarrow, z) = \hat{y}[(\exists x) \,.\, x\epsilon\alpha \,.\, \mathrm{R}(x, y, z)!].$$

These might be respectively the class of persons each of whom is jealous of some Frenchman on account of z, and the class of persons of each of whom some Englishman is jealous on account of z.

§ 15. From the $(\text{class})^2$ $\mathrm{R}(\rightarrow, ``\beta, z)$ we can as usual get the relation $\mathrm{R}(\rightarrow, ``\beta, -)$. And from this, as usual, we can get the $(\text{class})^3$ $\mathrm{R}(\rightarrow, ``\beta, ``\underline{\gamma})$. Similarly from $\mathrm{R}(``\alpha, \rightarrow, z)$ we can get the $(\text{class})^3$ $\mathrm{R}(``\alpha, \overline{\rightarrow}, ``\underline{\gamma})$. Six such classes are possible with a triadic relation, *viz.*,

$$\mathrm{R}(\leftarrow, \underline{``}\beta, ``\gamma) \text{ and } \mathrm{R}(\rightarrow, ``\beta, ``\underline{\gamma})$$
$$\mathrm{R}(``\alpha, \overline{\rightarrow}, ``\gamma) \text{ and } \mathrm{R}(``\alpha, \rightarrow, ``\gamma)$$
$$\mathrm{R}(``\underline{\alpha}, ``\beta, \Rightarrow) \text{ and } \mathrm{R}(``\overline{\alpha}, ``\underline{\beta}, \rightarrow).$$

It can be shown without difficulty that

$$s`s`\mathrm{R}(\rightarrow, ``\underline{\beta}, ``\gamma) = s`s`\mathrm{R}(\rightarrow, ``\beta, ``\underline{\gamma}) = \hat{x}[(\exists y, z) \,.\, y\epsilon\beta \,.\, z\epsilon\gamma \,.\, \mathrm{R}(x, y, z)\,!$$

Similarly we can show that the logical sum of the logical sum of the other two corresponding pairs is respectively

$$\hat{y}[(\exists x, z) \,.\, x\epsilon\alpha \,.\, z\epsilon\gamma \,.\, \mathrm{R}(x, y, z)!] \text{ and } \hat{z}[(\exists x, y) \,.\, x\epsilon\alpha \,.\, y\epsilon\beta \,.\, \mathrm{R}(x, y, z)!].$$

As an illustration, $s`s`\mathrm{R}(\rightarrow, ``\underline{\beta}, ``\gamma)$ might be the class of persons who are jealous of some Frenchman on account of some German.

§ 16. *Extension of* $\mathrm{R}``$.—We are now in a position to deal with such notions as $\mathrm{R}``\beta$. Let us begin with dyadic relations and then extend our results to relations of higher polyadicity. If R be a dyadic relation $\mathrm{R}``\beta$ is defined as

$$\hat{x}[(\exists y) \,.\, y\epsilon\beta \,.\, \mathrm{R}(x, y)!].$$

Evidently we must not use the notation $\mathrm{R}(x, ``\beta)$ for this class. For we have already used it to denote a class of *relational complexes, viz.,* $\hat{u}[(\exists y) . y \epsilon \beta . u = R(x, y)]$. But what we now want to symbolise is a class of *terms in a relational complex.*

Now, there is a close and interesting relation between $R``\beta$ and $R(x, ``\beta)$.

Remember that $R(x, y)! . \equiv, (\exists u) . u = R(x, y)$.

Then
$$\begin{aligned} R``\beta &= \hat{x}[(\exists u) : (\exists y) . y\epsilon\beta . u = R(x, y)] \\ &= \hat{x}[(\exists u) . u\epsilon R(x, ``\beta)] \\ &= \hat{x}[E!R(x, ``\beta)]. \end{aligned}$$

Now I suggest that the class $\hat{x}[\exists!R(x, ``\beta)$ should be symbolised by the formula $R(!, ``\beta)$. Hence for Russell's $R``\beta$ we shall write $R(!, ``\beta)$.

Now consider the class

$$\times\ \hat{y}[(\exists x) . x\epsilon\alpha . xRy].$$

This
$$\begin{aligned} &= \hat{y}[(\exists x) . x\epsilon\alpha . R(x, y)!] \\ &= \hat{y}[(\exists u) : (\exists x) . x\epsilon\alpha . u = R(x, y)] \\ &= \hat{y}[\exists!R(``\alpha, y)]. \end{aligned}$$

This can be consistently symbolised as $R(``\alpha, !)$.

We have then a notation which is (*a*) readily extensible to relations of higher degrees of polyadicity, and (*b*) brings out forcibly the difference between $R``\beta$—a class defined by relational propositions—and $R(x, ``\beta)$—a class whose members are relational complexes.

We must carefully note that, in spite of the appearance to the contrary, we cannot pass back from $R(``\alpha, !)$ to a relational complex $R(x, !)$ and suppose that the class $R(``\alpha, !)$ is generated from the complex $R(x, !)$ by a relation $R(-, !)$ between the complex and x. The fact is that whenever we are given a complex containing an individual or a class as a term we can go on to derive a relation between it and that individual or class. And from this we can construct a class of such complexes by substituting for the individual a class with two commas or for the class a $(\text{class})^2$ with two commas. This we have already done with $R(\rightarrow, y)$. But when we start with a class of the form $R(!, ``\beta)$ we cannot assume that the opposite path can be trodden and that $R(!, ``\beta)$ *must* have been derived from a complex such as $R(!, y)$ through a relation $R(!, -)$. Under the present circumstances we are precluded from using the formula $R(x, !)$ or $R(!, y)$ for any purpose whatever. For if we could use it we could derive from it $R(``\alpha, !)$ and $R(!, ``\beta)$ respectively according to the general rules of our notation. But these have already had a meaning assigned to them, and it is such that they *cannot* have been so derived. For, if they had been so derived, they would be classes *of* complexes or *of* classes, whereas they are classes of terms *in* complexes, and in most cases these terms are not themselves either complexes or classes.

§ 17. We must now remark that it can easily be proved that

$$s\text{‘}\mathrm{R}(\rightarrow, \text{“}\beta) = \mathrm{R}(\,!, \text{“}\beta)$$

and

$$s\text{‘}\mathrm{R}(\text{“}\alpha, \rightarrow) = \mathrm{R}(\text{“}\alpha, !).$$

With this preliminary proposition we can proceed to extend the notion of R“ to triadic relations. Starting with $\mathrm{R}(x, y, z)$ we can get the following classes:—

$$\mathrm{R}(\text{“}\alpha, !, z) \text{ and } \mathrm{R}(\text{“}\alpha, y, !)$$
$$\mathrm{R}(x, \text{“}\beta, !) \text{ and } \mathrm{R}(!, \text{“}\beta, z)$$
$$\mathrm{R}(x, !, \text{“}\gamma) \text{ and } \mathrm{R}(!, y, \text{“}\gamma).$$

Then $\mathrm{R}(\text{“}\alpha, !, z) = \hat{y}[(\exists x) . x\epsilon\alpha . \mathrm{R}(x, y, z)!]$ with corresponding meanings for the others. We see that

$\mathrm{R}(\text{“}\alpha, !, z) = s\text{‘}\mathrm{R}(\text{“}\alpha, \rightarrow, z)$, and similarly for the others. *E.g.*, $\mathrm{R}(\text{“}\alpha, !, z)$ might mean the class of people of whom some Englishmen are jealous on account of z.

Now each of these classes will give rise to a relation between itself and the remaining individual in it. These relations give rise to six classes of classes, *viz.*,

$$\mathrm{R}(\text{“}\alpha, !, \text{“}\gamma) \text{ and } \mathrm{R}(\text{“}\alpha, \text{“}\beta, !)$$
$$\mathrm{R}(\text{“}\alpha, \text{“}\beta, !) \text{ and } \mathrm{R}(!, \text{“}\beta, \text{“}\gamma)$$
$$\mathrm{R}(\text{“}\alpha, !, \text{“}\gamma) \text{ and } \mathrm{R}(!, \text{“}\beta, \text{“}\gamma).$$

Now, *e.g.*, $\mathrm{R}(\text{“}\alpha, !, \text{“}\gamma) = \hat{\delta}[(\exists z) . z\epsilon\gamma . \delta = \mathrm{R}(\text{“}\alpha, !, z)]$ and $\mathrm{R}(\text{“}\alpha, !, \text{“}\gamma) = \hat{\delta}[(\exists x) . x\epsilon\alpha . \delta = \mathrm{R}(x, !, \text{“}\gamma)]$.

It is easy to prove from this that

$$s\text{‘}\mathrm{R}(\text{“}\alpha, !, \text{“}\gamma) = s\text{‘}s\text{‘}\mathrm{R}(\text{“}\alpha, \rightarrow, \text{“}\gamma) = \hat{y}[(\exists z, x) . z\epsilon\gamma . x\epsilon\alpha . \mathrm{R}(x, y, z)!].$$

Now it will be useful to have a simpler notation for such classes as $s\text{‘}\mathrm{R}(\text{“}\alpha, !, \text{“}\gamma)$ or $s\text{‘}s\text{‘}\mathrm{R}(\text{“}\alpha, \rightarrow, \text{“}\gamma)$. I suggest that they should be denoted by the symbol $\mathrm{R}(\text{“}\alpha, !!, \text{“}\gamma)$, etc. An obvious further simplification which will be useful in dealing with relations of higher polyadicity is to write $!^2$ for $!!$. We shall thus get three important classes, *viz.*,

$$\mathrm{R}(!^2, \text{“}\beta, \text{“}\gamma) = \hat{x}[(\exists y, z) . y\epsilon\beta . z\epsilon\gamma . \mathrm{R}(x, y, z)!]$$
$$\mathrm{R}(\text{“}\alpha, !^2, \text{“}\gamma) = \hat{y}[(\exists z, x) . z\epsilon\gamma . x\epsilon\alpha . \mathrm{R}(x, y, z)!]$$

and

$$\mathrm{R}(\text{“}\alpha, \text{“}\beta, !^2) = \hat{z}[(\exists x, y) . x\epsilon\alpha . y\epsilon\beta . \mathrm{R}(x, y, z)!].$$

E.g., the first of these might be the class of people who are jealous of some Frenchmen on account of some Germans.

§ 18. We have thus found that logical *sums* of certain

$\rightarrow$ classes are important in the case of dyadic relations, and sums of sums of similar classes in that of triadic relations. This naturally leads us to inquire whether the logical *products* of the same classes might not be of sufficient importance to deserve a special symbolism.

Let us consider $p\text{‘}R(\rightarrow, \text{“}\beta)$. It is easy to show that

$$p\text{‘}R(\rightarrow, \text{“}\beta) = \hat{x}[y\epsilon\beta\,)_y\, R(x, y)!],$$

and that

$$p\text{‘}R(\text{“}\alpha, \rightarrow) = \hat{y}[x\epsilon\alpha\,)_x\, R(x, y)!].$$

We have denoted $s\text{‘}R(\rightarrow, \text{“}\beta)$ by $R(!, \text{“}\beta)$. Let us denote the corresponding product by substituting ¡ (a note of exclamation—or 'shriek' as Whitehead would call it—upside down) for !. We shall thus get the two classes

$$R(\text{“}\alpha, \text{¡}) \text{ and } R(\text{¡}, \text{“}\beta).$$

Now suppose we know that $\alpha\ (R\ (\text{¡}, \text{“}\beta)$. This means that $x\epsilon\alpha\,.\,y\epsilon\beta)_{x,\,y}\, R(x, y)!$ The knowledge that $\beta\ (R\ (\text{“}\alpha, \text{¡})$ gives us the same information. Now this is often an important fact to symbolise. Suppose, *e.g.*, that β is the interior of a plane angle, and that $R(x, y)!$ means that x can be joined to y by a segment that does not cut the sides of this angle. Then $\beta\ (R\ (!, \text{“}\beta)$ would express the fact that any two points within the angle can be joined by a segment that does not cut the sides of the angle.

Another important piece of information can be symbolised by the statement $\exists!\alpha\cap R(!, \text{“}\beta)$. This tells us that there is at least one point in α and one in β which have to each other the relation R. Now these two statements may be regarded as defining two important relations, connected with R, between two classes. These relations might be symbolised respectively by R_p and R_s. Then

$$R_p = \hat{\alpha}\hat{\beta}[x\epsilon\alpha\,.\,y\epsilon\beta\,)_{x,\,y}\,.\,R(x, y)!]\ \text{Df.}$$

and

$$R_s = \hat{\alpha}\hat{\beta}[\exists x, y)\,.\,x\epsilon\alpha\,.\,y\epsilon\beta\,.\,R(x, y)!].\ \text{Df.}$$

§ 19. We can now go on to apply the same principles to triadic relations We have so far considered only such classes as $R(!!, \text{“}\beta, \text{“}\gamma)$, *i.e.*, $s\text{‘}s\text{‘}R(\rightarrow, \text{“}\beta, \text{“}\gamma)$. But we could evidently consider three other classes obtained from

$$R(\rightarrow, \text{“}\beta, \text{“}\gamma),\ \textit{viz.},$$

$p\text{‘}s\text{‘}R(\rightarrow, \text{“}\beta, \text{“}\gamma)$ which might be written $R(\text{¡}!, \text{“}\beta\text{“}\gamma)$
$p\text{‘}p\text{‘}R(\rightarrow, \text{“}\beta, \text{“}\gamma)$,, ,, $R)\text{¡¡}, \text{“}\beta, \text{“}\gamma)$
and
$s\text{‘}p\text{‘}R(\rightarrow, \text{“}\beta, \text{“}\gamma)$,, ,, $R(!\text{¡}, \text{“}\beta, \text{“}\gamma)$.

Of these classes only one, so far as I have been able to see, is likely to be of great logical importance. This is $R(\text{¡}!, \beta\text{“}, \text{“}\gamma)$.

It can be shown without much difficulty that

$$R(!¡, \text{“}\beta, \text{“}\gamma) = \hat{x}[y\epsilon\beta \,.\, z\epsilon y\,)_{y,z} \,.\, R(x, y, z)!].$$

This class derived from a triadic relation therefore corresponds to $R(¡, \text{“}\beta)$ derived from a dyadic relation.

Clearly $\alpha(R(¡!, \text{“}\beta, \text{“}\gamma) \,.\! \equiv : x\epsilon\alpha \,.\, y\epsilon\beta \,.\, z\epsilon\gamma\,)_{x,y,z} \,.\, R(x, y, z)!$.

We thus have a derived triadic relation between α, β, γ which we can denote by R_{ps}, so that

$$R_{ps}(\alpha, \beta, \gamma)! \,.\! \equiv . \; \alpha(R(¡!, \text{“}\beta, \text{“}\gamma).$$

The derived relation, obtained from a triadic R and comparable to R_s from a dyadic R, may be symbolised by R_{ss}.

$$\begin{aligned} R_{ss}(\alpha, \beta, \gamma)! \,.\! \equiv . \; & (\exists x, y, z) \,.\, x\epsilon\alpha \,.\, y\epsilon\beta \,.\, z\epsilon\gamma \,.\, R(x, y, z)! \,. \\ \equiv . \; & \exists ! \alpha \cap R(!!, \text{“}\beta, \text{“}\gamma). \end{aligned}$$

§ 20. *Geometrical Illustration.*—It may be of interest at this point to illustrate our notation by a geometrical example. For this purpose I shall translate the axioms on the relation of between in Hilbert's *Foundations of Geometry* (Eng. Trans., p. 6) into our notation.

Let π stand for the class of points, and λ for the class of rectilinear relations. Then the statement $\alpha\epsilon\mathrm{Cl}\text{‘}\pi\cap s\text{‘}\mathrm{Cl}\text{“}\mathrm{C}\text{“}\lambda$ will mean α is a class of collinear points. With these preliminary pieces of notation settled we can begin to deal with the relation of between. Let $T(x, y, z)!$ denote x is between y and z.

Then $T(x, y, z)! \,.\,) \,.\, \iota\text{‘}x \cup \iota\text{‘}y \cup \iota\text{‘}z \,\epsilon\, \mathrm{Cl}\text{‘}\pi\cap s\text{‘}\mathrm{Cl}\text{“}\mathrm{C}\text{“}\lambda\cap 3$.

Now for Hilbert's axioms:—

(1) 'If A, B, and C are points of a straight line, and B lies between A and C, then B lies also between C and A.'

Translation.—$T(\rightarrow, y, z)\,(T(\rightarrow, z, y)$.

(2) 'If A and C are two points of a straight line then there exists at least one point B lying between A and C, and at least one point D so situated that C lies between A and D.'

Translation.—$y, z\epsilon\pi \,.\, y \neq z \,.).\; \exists ! T(\rightarrow, y, z). \;\; \exists ! T(z, y, \rightarrow)$.

(3) 'Of any three points situated on a straight line there is always one and only one between the other two.'

Translation.—$\alpha\epsilon\mathrm{Cl}\text{‘}\pi\cap s\text{‘}\mathrm{Cl}\text{“}\mathrm{C}\text{“}\lambda\cap 3 \,.). \;\; T(!!, \text{“}\alpha, \text{“}\alpha)\cap\alpha\epsilon 1$.

[1] (4) 'Any four points A, B, C, D of a straight line can always be arranged so that B shall lie between A and C and also between A and D, and, furthermore, so that C shall lie between A and D and also between B and D.'

I must remark in the first place that this axiom is very badly stated. You cannot *arrange* points on a line; they are in the order in which they are, and there is an end of the matter. What you can arrange is the letters by which you shall denote them. But an axiom can hardly deal with typographical matters like this. I shall therefore substitute for Hilbert's axiom the following, which, when combined with (3) seems to give all the necessary properties of linear order:—

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[1] The 'axiom' has since been deduced from Hilbert's other axioms.

$$a\epsilon\mathrm{Cl}\text{‘}\pi\cap s\text{‘}\mathrm{Cl}\text{“}\mathrm{C}\text{“}\lambda\cap 4\,.\,)\,:\,a\cap\mathrm{T}(!!,\text{“}a,\text{“}a)\epsilon 2 :\ a\cap\mathrm{T}(!!,\text{“}a,\text{“}a)$$
$$(\ \mathrm{T}\{!!,\text{“}a\cap\mathrm{T}(!!,\text{“}a,\text{“}a),\text{“}a-\mathrm{T}(!!,\text{“}a,\text{“}a)\}$$
$$\cap\mathrm{T}\{!!,\text{“}a-\mathrm{T}(!!,\text{“}a,\text{“}a),\text{“}a-\mathrm{T}(!!,\text{“}a,\text{“}a)\}.$$

This formidable looking proposition asserts that if a be a class of four collinear points then the members of a which are between members of a are two in number. Moreover, the members of a which are between members of a are between a member of a which is and a member of a which is not itself between members of a. Furthermore, the members of a which are between members of a are also between members of a which are not between members of a.

This is a fairly complex statement, and our notation expresses it with reasonable simplicity.

§ 21. *Extension of* D, ᗡ, *and* C.—If R be a dyadic relation D‘R is defined as $\hat{x}[(\exists y)\,.\,\mathrm{R}(x,y)!]$ and ᗡ‘R is defined as $\hat{y}[(\exists x)\,.\,\mathrm{R}(x,y)!]$.

Now consider the class R(!, “V) when V is the universe of entities of the type of y in $\mathrm{R}(x, y)$.

$$\mathrm{R}(!,\text{“}\mathrm{V}) = \hat{x}[(\exists y)\,.\,y\epsilon\mathrm{V}\,.\,\mathrm{R}(x,y)!].$$

But $\quad y\epsilon\mathrm{V}\,.\,\mathrm{R}(x,y)!\equiv\mathrm{R}(x,y)!$

Hence $\quad \mathrm{D}\text{‘}\mathrm{R} = \mathrm{R}(!,\text{“}\mathrm{V})$.

Similarly $\quad \text{ᗡ‘}\mathrm{R} = \mathrm{R}(\text{“}\mathrm{V},!)$.

Hence D, on our notation, is – (!, “V) and ᗡ is – (“V, !) So D“λ becomes “λ(!, “V) and ᗡ“λ becomes “λ(“V, !).

Now C‘R is defined as D‘RUᗡ‘R. Hence for us

$$\mathrm{C}\text{‘}\mathrm{R} = \mathrm{R}(!,\text{“}\mathrm{V})\mathrm{U}\mathrm{R}(\text{“}\mathrm{V},!).$$

It is easy to extend these results to relations of higher degrees of polyadicity. Here, however, the notion of domain and co-domain breaks down; it is better to say that there are as many different domains as there are degrees of polyadicity in the relation. Suppose we have a triadic R. Then we can denote its three domains by D_1‘R, D_2‘R, and D_3‘R.

Then $\quad \mathrm{D}_1\text{‘}\mathrm{R} = \mathrm{R}(!!,\text{“}\mathrm{V},\text{“}\mathrm{V})$

$\quad \mathrm{D}_2\text{‘}\mathrm{R} = \mathrm{R}(\text{“}\mathrm{V},!!,\text{“}\mathrm{V})$

and $\quad \mathrm{D}_3\text{‘}\mathrm{R} = \mathrm{R}(\text{“}\mathrm{V},\text{“}\mathrm{V},!!)$.

D_1, D_2, and D_3 will be the corresponding formulæ with – written for R. Naturally

$$\mathrm{C}\text{‘}\mathrm{R} = \mathrm{R}(!!,\text{“}\mathrm{V},\text{“}\mathrm{V})\mathrm{U}\mathrm{R}(\text{“}\mathrm{V},!!,\text{“}\mathrm{V})\mathrm{U}\mathrm{R}(\text{“}\mathrm{V},\text{“}\mathrm{V},!!).$$

It might prove convenient, and could do no harm, to denote $\mathrm{C}‘\mathrm{R}$ by $\mathrm{R}(!, !)$ for dyadic relations and by $\mathrm{R}(!^2, !^2, !^2)$ for triadic ones. But I should suppose that here, and indeed in all cases where we have dyadic relations whose dyadicity is guaranteed by logic itself and not merely postulated in the axioms of some special science with which we are dealing, the old Russell-Whitehead notation should be conserved with the slight modifications that I have suggested about domains. Hence, although we have shown that $\mathrm{R}(!!, ‘‘\mathrm{V}, ‘‘\mathrm{V})$ is the proper and consistent way to express $\mathrm{D}_1‘\mathrm{R}$ on our notation, it would be pedantic not to use the shorter and more convenient $\mathrm{D}_1‘\mathrm{R}$. The same remarks apply to such purely logical dyadic relations as s, ρ, Cl, etc., which nearly always occur in actual life in descriptive functions, and which are known by every one to be dyadic.

§ 22. *Extension of R‘y.*—It remains for us to give a consistent symbolism for the notion $\mathrm{R}‘y$, *i.e.*, the term which has the relation R to y. Now here we are met by a problem somewhat similar to that which faced us in dealing with $\mathrm{R}‘‘\beta$. We then needed to symbolise a class of *terms* instead of a class of complexes; we succeeded in doing this by means of the connexion between $\mathrm{R}‘‘\beta$ and $s‘\overrightarrow{\mathrm{R}}‘‘\beta$. Here we want to symbolise the *term* which has the relation R to y. Now, in particular cases, we have been able to do this with ease. *E.g.*, we have symbolised the *class* which has the relation $\overrightarrow{\mathrm{R}}$ to y by $\mathrm{R}(\rightarrow, y)$, and we have constantly symbolised the *relation* which a complex has to its various terms. *E.g.*, $\mathrm{R}(-, y, z)$ is our standard way of symbolising

$$(\iota \mathrm{S})[\mathrm{R}(x, y, z)\ \mathrm{S}x]$$

in Russell's notation. But it does not follow that we can easily find a consistent method of symbolising the *term* which has the relation R to y when this term is neither a class nor a relation.

The notation that suggests itself is $\mathrm{R}(‘, y)$ for $\mathrm{R}‘y$ and $\mathrm{R}(x, ‘)$ for $\breve{\mathrm{R}}‘x$. If this be adopted, $\mathrm{R}‘$ would be represented by $\mathrm{R}(‘, -)$ and $\breve{\mathrm{R}}‘$ by $\mathrm{R}(-, ‘)$.

Let us now consider what would be meant by $\mathrm{R}(‘, ‘‘\beta)$, We should have $x \epsilon \mathrm{R}(‘, ‘‘\beta) . \equiv . (\exists y) . y \epsilon \beta . x = \mathrm{R}(‘, y)$.

E.g., if β stands for Englishwomen and R for the relation of husband, then $\mathrm{R}(‘, ‘‘\beta)$ is the class of men who are the only husbands of Englishwomen. $\mathrm{R}(‘, ‘‘\beta)$ is thus a class which contains none of the husbands of Englishwomen who are polyandrists.

Let us now extend the notation to triadic relations.

$R(\text{‘}, y, z)$ will be the x such that $R(x, y, z)$!
$R(x, \text{‘}, z)$,, ,, y ,, ,, $R(x, y, z)$!
$R(x, y, \text{‘})$,, ,, z ,, ,, $R(x, y, z)$!.

It is easy to see how this notion can be extended by analogy with the extensions of $R(\rightarrow, y, z)$.

§ 23. *Converses of Relations.*—The notion of converses ceases to be of any great importance with our notation, for in a great many cases all that is needed of converses is expressed by the order of terms within the bracket.

Any relation will have as many 'converses' as there are permutations among its terms. Thus to any triadic relation will correspond five others. The name *converse* seems no longer applicable, it will be better to call these correlated relations. Let us start with $R(x, y, z)$, and write

$$R(x, y, z) = S(y, z, x) = T(z, x, y) = U(z, y, x) = V(y, x, z) = W(x, z, y).$$

Now in $U(z, y, x)$ the second term is in the same position as in $R(x, y, z)$, and the remaining ones are interchanged. Let us write to indicate this $R_2(z, y, x) = R(x, y, z)$. Then $U = R_2$. Similarly $V = R_3$ and $W = R_1$. It remains to symbolise S and T.

Suppose we start with the order y, z, x. Then keeping the first term fixed, and interchanging the other two, we get y, x, z, Now keep the third term fixed, and interchange the other two. We get x, y, z. We may represent S therefore as R_{31}. It is easy to see that it could equally be represented by R_{12} or R_{23}. Thus, taking R_{23}, we should first get z, y, x, and then x, y, z.

Hence $S = R_{12} = R_{23} = R_{31}$.

Now the essential point here is not that such and such numbers should be chosen, but that some pair should be chosen in direct cyclic order. Hence we might represent S by $\overrightarrow{R}$.

Similarly for T. Starting with the order z, x, y we can first keep x fixed and so get y, x, z. We can then keep z fixed and so get x, y, z. Thus $T = R_{32}$ As before we can show that

$$T = R_{13} = R_{32} = R_{21}.$$

Here the order is the inverse cyclic order. So T can be represented by $\overleftarrow{R}$. If R be triadic the five correlated relations are therefore R_1, R_2, R_3, $\overrightarrow{R}$ and $\overleftarrow{R}$. I am afraid that the notation for the relations correlated with those of higher order than the third would be very complex.

III.—DR. BOSANQUET'S THEORY OF MENTAL STATES, JUDGMENT, AND REALITY.

BY J. E. TURNER.

IN the final chapter of his *Logic*,[1] Dr. Bosanquet deals with the fundamental and difficult subject of "The relation of mental states to judgment and to reality"; and of the many questions inevitably suggested the only one I wish very briefly to consider may perhaps best be expressed in the form—"What are the character and locus of mental states, as such? To what content that is, in our total real world should this term be applied?"[2] The question thus concerns not their function in knowledge, but their nature and distribution, so far as these can at all be distinguished (though not dissociated) from function; for "mental states," as such, are of course an abstraction; can we determine exactly then what the term should properly denote?

Any resumé of the different views hitherto advanced is unnecessary; but it may prevent misapprehension to say that with Dr. Bosanquet I think we must hold to begin with, that there is no dualism between mental states and the real world—they do not constitute a stratum,[3] beyond which the real world lies; somehow, we must maintain, there is unbroken and essential continuity between mental states and reality, so that these do not stand to each other in the relation either of sign[4] to some thing-in-itself, or of a veil to a hidden reality, or of delusive appearance to some incomprehensible real.

From this basis then, Dr. Bosanquet regards mental states[5] as being an aspect or phase of all known reality without any exception; this initial principle is fully established, I think, by the statements:—

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[1] *Logic*, vol. ii., chap. x. The quotations are from the second edition, and the asterisks indicate my italics.

[2] It may make my general standpoint clearer to add that the inquiry concerns mainly the perennial subject of the nature of physical reality, dealt with by Dr. Bosanquet in sec. (2) of the chapter cited.

[3] *Loc. cit.* (p. 296, n. a.). Perhaps I may add that since, in my own opinion, such "stratum" theories lead ultimately to subjectivism, all the obviously subjectivist views at present current are also ruled out in advance.

[4] None the less, every element has significance, and signifies, ultimately, the whole; only it is never a mere sign and nothing more.

[5] So far as concerned in judgment at all—*loc. cit.*, p. 295.

"Mental states . . . are the same thing as immediacy," (p. 298);

"Immediacy is not a stratum of our consciousness, but a phase which all or any of its objects participate in and may wholly pass into," (p. 297);

"All our objective apprehension is something which is capable of taking the shape of a mental state," (p. 300);

"It is not sensation only that can become immediate"; (p. 298).

In general, that is, "Anything may become psychical"; (p. 297); and it is this *universality of mental character* or aspect that appears to me not to be indubitably established by Dr. Bosanquet's arguments, but to present difficulties both existential and logical.

1. Mental states, we find then in the first place, contain matter or content—"all contain matter that has been and may be significant"—"all sensational or perceptual contents . . . hold their place . . .," (p. 295). We have here, that is, a distinction, within the mental state itself, between the state as a whole, and its content; and this can only mean, it appears to me, a distinction between the content and (what is perhaps best called) the process, relation, or activity, which together constitute and are involved in every mental state—a distinction perhaps best expressed in the two phrases—"being conscious"—and "what I am conscious of"; and having thus distinguished, within every mental state, the content or matter from the process or relation, the question arises—Are Dr. Bosanquet's principles, cited above, true of this content, and of this relation, alike and equally? Or is it necessary, on the other hand, so to maintain this distinction as to regard the process or activity as being always mental or psychical, but the content as not thus *universally* mental (even as an aspect), though it certainly is so in some instances? For as to the process itself, I suppose there is no doubt; "being conscious," in any mode and to any degree, is always a psychical event or phenomenon—a mental occurrence—a process of or within the mind;[1] but it would not therefore and at once follow from this alone (even should it prove to be true on any other grounds) that the content—

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[1] "Being conscious" barely as such is of course an abstraction—is always, in the concrete, associated with content; but one is forced to express acceptance of such elementary principles by the misunderstanding which persists in cropping up.

the "contained matter"—is also in all cases without exception mental, or even that it has universally a mental phase; its precise nature in that respect remains still an open question.

2. And though this result is so far only negative, it seems next to follow, from the relation which Dr. Bosanquet goes on to posit between mental states and ideas, that these mental processes or activities may henceforth be disregarded, and our inquiry confined to the *content* only of mental states; for "the difference between mental states and ideas with a meaning lies in the 'use' of the former," (p. 295). Now does "mental state" refer here to the process, or to the content, or to both taken together? I think to content only, for we have—"all sensational or perceptual *contents** . . . bear the stamp of some symbolic relations . . .," (p. 295), and—"the difference between mental states or particular existent mental *contents** and ideas . . ." (p. 298);—the contrast here, that is, is between ideas and mental *contents*, not between ideas and mental processes—as indeed might be expected from the nature of the phenomena; and then further, Dr. Bosanquet means by "mental state"—"something in the mind which belongs to and suggests nothing more than itself"—which escapes "the despotism of significance"; (p. 296).

I wish to avoid any appearance of hyper-criticism, but it appears to me that much depends here on the word "in"—we have something not "before" the mind, nor "for" the mind, but "in" the mind[1]—"something which is an occurrence in my mind"; (p. 298); so that we can now state the question with more exactitude—Is "all our objective apprehension something which is capable" (that is, *as content*) "of taking the shape of an occurrence in the mind"?

3. The first difficulty which attends the affirmative answer given by Dr. Bosanquet to this question is, that it places on the same level (if only in one aspect or phase) (*a*) the whole content of objective reality—"our objective apprehension"—and (*b*) the undeniably subjective contents of mind—those contents which are never regarded in any aspect whatever as objective,[2] or as other than the transient contents of the individual mind[3]—*e.g.*, dreams, memories and hallucinations.

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[1] The precise mode of expression appears more important if we should go on to say that reality is "in" the Divine, or absolute, mind.

[2] In one sense even these may be "objective," if made the "object of thought";—this variety of the meaning of our fundamental terms is always a difficulty; but I think the distinction above is well established.

[3] "The perishing existences which pass through consciousness, and which never recur" (*Logic*, i., p. 68).

Can the content of objective apprehension then—can objective reality—always possess an essential aspect on this same level of transience and privacy?[1] Is it "in the mind," or has it always a phase "in the mind," in the same mode and in the same sense that content universally regarded as subjective is "in the mind," so that it is wholly an essential and indispensable constituent of the individual mind's being and existence, both wholly standing and falling together? The affirmative answer again at once commits us to the further principle that all such content depends both for its existence and its character (like content admittedly subjective) on the activity of the individual brain[2]—if this ceases, the content "in the mind" vanishes in its entirety and ceases to exist in any mode whatever. Is this true, always as an aspect, and on occasion entirely, of the content of our objective apprehension? But if, on the other hand, this content is "in the mind" in some mode or sense different from the admittedly subjective, then it appears necessary to distinguish between these different modes—to say perhaps that while subjective content is truly "in the mind," the objective is rather "for," or "before," the mind;—and I can only hope this suggested distinction is not open to the criticism directed by Gibbon against the ancient Homoousion controversy.

For we must agree that reality certainly is "in the mind," if we mean by this that it is rational—intelligible—systematic—ideal; but I do not think this is the meaning which Dr. Bosanquet intends to convey here and throughout his consideration of mental states, ideas, and reality; because in using this expression to imply rationality, Dr. Bosanquet means (I think) that reality is "in the mind" in its fulness and completeness, and the more so the completer it is[3]—we have mind grasping a fuller real, and reality elevated (as it were) into mind-content. But it appears to be the reverse of this view which is implied here in the treatment of mental states, as such; reality does not here become, as a relatively complete whole, "active in the total life of our mind," but "contains within it a mass of psychical stuff" to the level of which it may on occasion descend (p. 298); the object of thought may (here) "fall back into an almost complete immediacy "[1] which is the same thing as "existence as a mental occurrence," and as such, further, wholly dependent (presumably) on cerebral activity;—the first meaning implies an ascent in the scale of being; the second a fall.

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[1] Such privacy is the accepted basis of some well-known theories of knowledge, which derive our knowledge of objective reality from "private" space and "private" time, etc.

[2] The passage, sec. (6), p. 307, *loc. cit.*, seems to imply that this is the case; but I consider this section below.

[3] Compare the passage (p. 297), "When we feel ourselves . . . subjective state".

4. These points concern what may perhaps be called the existential or ontological aspect of the subject; but Dr. Bosanquet's complete theory appears to involve further a more important *logical* problem. For mental states must always be regarded from two standpoints; they are (*a*) "particular existent mental contents or occurrences," (p. 298), and further (*b*) an aspect or phase (this, I take it, again as content rather than as process) of all objects of thought, in their "full detail," universally and exhaustively.[2] But this second aspect itself again is only an abstraction; for further, we have now to take into account their essential logical significance—their value, that is, as elements in knowledge;—and thus "no mental states . . . are mere mental states, but all contain matter that has been and may be significant"; "all sensational or perceptual contents . . . bear the stamp of some symbolic relations," (p. 295); they never can be taken, that is, apart from their essential function of "signifying some object of thought". Now what is the "object of thought," thus signified? Obviously it is not (*a*) the mental state or content in itself, as being a psychical phase or aspect;[3] but also further, not (*b*) such content itself in its ideal phase, as being significant and symbolical; because as such—as ideal —it must symbolise always something other than itself—the symbol and the symbolised cannot be wholly identical. I agree that every element in reality, properly viewed, is significant—in principle, of reality as a whole; and further, that very much of the total content of our objective comprehension has an unquestionably psychical or mental aspect, or even essential character; but I cannot see that we can go farther and say with Dr. Bosanquet that the *whole* of this significant content has such a mental aspect,—unless (again) we mean by this that it is rational—intelligible—ideal—and this I take not to be Dr. Bosanquet's principal meaning here.

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[1] *Cf.* "The word 'immediate' . . . is used to exclude the real world which is the content of experience"; (*Psychology of the Moral Self*, p. 8).

[2] *Cf.* the passage (p. 296), "Immediacy is a character that may be assumed by any mental complex or object, however logically articulate. . . ."

[3] Unless again we make it, by deliberate abstraction, the subject of consideration.

For in the case of (*a*) content whose existential nature is admittedly psychical (in the usual sense of that term) and nothing more[2]—that is, an element cognised by some one mind and no other—and whose function again, in virtue of its inherent significance, is logical, we appear to have accounted for its entire reality.[3] In its own existential nature it has little, if any, value; such value as it has arises wholly from its innate significance; in itself transient and dependent on cerebration, it derives its value from the world beyond itself. But consider next (*b*) some perceived content—some part of physical reality; this, again, has its native logical significance; but if we add that it has an immediate mental phase "in the mind" (in the same sense, that is, as admittedly psychical content is "in the mind") then, *so far as this phase is concerned*, its logical significance once more predominates over its existence, which (again) is transient and dependent on cerebration. Such physical reality has, ex hypothesi, further phases of reality than the mental;[1] but these wider phases are only cognised always through construction, and by means of other mental contents themselves significant; and thus all the reality of the physical world, beyond its immediate "mental" aspects, is cognised always and only mediately, inferentially, constructively,[4] on and from a basis of content which, while certainly symbolic, is itself, like purely psychical content, transient and brain dependent so far as its existence is concerned; and further, the ulterior aspects of physical reality which are thus symbolised must therefore just on that account be other than its immediate, mental, symbolic, aspects; for if not, what are the purpose and value of the whole symbolic system?—if it symbolises only aspects which are wholly identical with itself, it is surely quite superfluous.

We should thus have to accept the result that all the permanent real aspects of the perceived physical world without exception are (for us) merely symbolised; and that all its vivid quality content is only symbolic, transient, brain dependent, and never, just as we vividly see, hear. and feel it, anything more than perishing and evanescent;[1] and Dr. Bosanquet consistently accepts this view;[2] only "our 'given' solid, immediate and real world" *must* "yield to Science or Speculation"—not, as he puts it, "may yield"; but even should this be true, there is surely loss, acutest in in the world of beauty. For can we value and cherish the beautiful, either in nature or in art, if when vivid it is merely a transient psychical phase, and is fully real only when it is symbolised—and therefore, just on that account, something other than the vividly beautiful itself? Only, I think, with difficulty and regret; if

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[1] That is, is free from sensation or perception as, *e.g.*, a train of pure thought in, say, mathematics.

[2] So much of reality, that is, as it can have as being only a constituent of the whole.

[3] "The nature of external objects . . . is physical . . . as well as psychical"; (*loc. cit.*, p. 309); see note at end of paper.

[4] Of course many are thus symbolised and constructed—molecular structure, lines of force, etc.; my point is, are our symbols *always* themselves only transient psychical existents?

> Music, when soft voices die,
> Vibrates in the memory,

still it is not music; and further, if the vivid contents of beauty are thus predominantly symbolical, what, more real and valuable than beauty itself, can we take them to symbolise?

Then with regard to the exact character of logical symbolical significance in general, is it not possible to distinguish two essentially different modes? The chemist's specimen of air, *e.g.*, symbolises for him the atmosphere and other gases, and possibly matter in general; and so do his formulæ, but in quite a different way; and similarly, in the case of perceived physical reality, I think it possible to regard its vivid sense-content as being significant of aspects of reality, not *other* in nature than itself (it being mental—psychical—)[3] but rather wider than itself, while also at least to some extent, entirely one with it in character, that character being then non-mental, except in the sense of being rational—intelligible—ideal.

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[1] In the sense that they "shall wax old like a garment," this is, of course, true; nor can we maintain that the physical world is the most important thing in the universe.

[2] *Logic*, chap. ix., sec. (6), p. 294.

[3] This seems implied by the passages (abridged, italics mine)—"The stuff of mental states does characterise external objects, although, *as characterising such objects*, it ceases to be a mere mental state. The nature of external objects is *continuous with that of the stuff of mind*, and is physical *as well as psychical*. The stuff of mental states enters into them." (pp. 309, 310). I take this to mean that the mental state (as content) persists throughout, the sole difference between it as a mere mental state, and as a constituent of physical reality, being its significant characterisation. But the external objects must include also elements other than the characterising mental states, which elements must then be either

(*a*) Similar to these states in their existential character; that is, transient and brain dependent; or

(*b*) Different in character; that is, while symbolised, still non-psychical.

Both alternatives present obvious difficulties.

For otherwise (to sum up) it seems to me that our theories of knowledge must become (in effect if not in intention) perilously akin to subjectivism. I do not of course impute subjectivism to Dr. Bosanquet;[1] at the same time I think that if we (*a*) apply the term "subjective" to such mental content as memories, dreams, and ideas,[2] characterised as this is by transience and brain dependence, and (*b*) also go on to regard vivid sense content as being (in essence) "in the mind" in the same sense as the former, and therefore (in essence) subjective also; then whatever be the value of sense-content and ideas as symbols, and however infallibly and faithfully they may indicate and signify to us ultimate and permanent reality, still when we consider the vividness and definiteness of this sense-content,[3] it certainly seems that the real world, by sheer contrast, is entirely cut off from direct knowledge; for, on this view, the whole content of which we have vivid, close, and intimate experience is (though symbolical) transient and brain dependent;[4] and further, simply because it is symbolical, it is different in its nature from ultimate reality, in virtue of the principle that there must always be some degree of difference (not here negligible) between symbol and symbolised. The real in itself thus must always be beyond our grasp, not only (as is plainly evident) in its extent, but also in its very nature; and we are reduced to the position of a chemist who has never dealt with anything but his formulæ, or of a person whose whole experience of the world has consisted in seeing an endless series of cinema pictures; and between such a standpoint and the Kantian there does not seem to be much difference in actuality, whatever there may be in theory.

5. The existence, if not the character, of content admitted to be wholly and purely psychical (though also significant), is dependent on, or correlated with, cerebral processes; therefore if the sense-content of physical percepts has a psychical phase, this phase likewise is correlated with cerebration. But to what extent, and in what way? The question is one of very great difficulty, and I can do no more than indicate

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[1] *Cf. op. cit.*, vol. ii., pp. 311-313.

[2] As distinct, that is, from what they are ideas of.

[3] These characteristics appear to be *prima facie* an argument against their subjective nature; at least any theory should endeavour to account for them.

[4] We approximate (in varying degrees) to this standpoint if we attempt to distinguish primary qualities as the more real from secondary and tertiary.

what appears obscure in Dr. Bosanquet's treatment,[1] and to advance a tentative suggestion. Dr. Bosanquet speaks of "the operation of the organ of sense upon" the object of cognition—"the modification effected in its physical operation by the organ of sense"—"of (the object) being known after transmission through a sense organ,"—"a physical object cannot be the same when a complex physical condition is superadded to it". But can we thus speak with any strictness of the object being literally "transmitted through," and "operated upon by," the sense-organ? "A vibrating violin string," continues Dr. Bosanquet (p. 309), "is not sonorous in the absence of a hearing ear." But *is* this a "simple physical fact"? As I ventured to point out when Mr. Russell advanced a similar view, it could be proved only if the ear could report what happens when it is not there to hear.

I would suggest that what is required here, as one factor at least, is the application of the essential distinction between the general process or activity of consciousness, and the vivid sense-content of the percept. We may then regard this activity itself as always certainly correlated with cerebration, but the (real) vivid sense-content as independent of such correlation, both in its existence and in its character. Though this view violates all the accepted canons of current psychology,[2] none the less I consider there is much to be said in its favour; but lack of space forbids any elaboration.

6. But now let it be admitted, finally, that all reality does present this psychical-mental aspect, and that therefore "thought adds no element to feeling, but merely reorganises its matter" (p. 299). Then the question arises—Is it possible for thought so to reorganise such feeling as to construct therefrom our real world?

This matter of feeling, which according to this view it is the task of thought to reorganise, is constituted (we must note) by "particular psychical images"—"the perishing existences which pass through consciousness, and which, qua particular psychical states on a level with mere sensations, never recur";[3]—this transient psychical aspect, however, being obliterated ordinarily by their symbolic function. Now to begin with both these characters of our ideas proper—their transient existence and their symbolic function—must be conceded; and the difficulty then seems to be—How can such transient entities ever have come to symbolise permanent reality and to be a universal aspect thereof? Granting that we can know that they are symbols,[1] still how can we know merely from themselves the character of what they symbolise —know anything, that is, beyond the bare formal truth that they are symbols? How can we even judge them transient, unless we can also apprehend the permanent, by contrast with which they are transient? In order to know (*a*) their own transient nature, (*b*) their symbolic function, and (*c*) what it is they symbolise, there must, I think, be presupposed the revelation to consciousness, in some manner, of the permanent reality compared with which they are transient, and which we can then regard them as symbolising; for no symbol whatever, merely in itself, can show what it stands for, apart from some independent revelation of the signified content; *e.g.*, these printed characters could merely of themselves mean nothing as to the world beyond them, to anyone who had not, independently of them, experienced that wider world. In general, therefore, if we are ever to appreciate the symbolical function of our psychical images, we must, on some occasions at least, experience the signified real apart from them, independently, and as "directly" as the psychical content itself is experienced; this I think we do in the form of the sensed constituents taken purely in themselves of all perceived content; and indeed this principle seems to follow from Dr. Bosanquet's own treatment of the nature of such content.

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[1] *Loc. cit.*, sec. (6), p. 307.

[2] On which are based ontologies so well known as those of Riehl, Lotze, Mach, and Hodgson; it is of course their place in such systems that makes the question of the nature of sense data so important.

[3] *Op. cit.*, vol. i., p. 68.

"In all judgments of perception," we find, "there is a presence of a something in contact with our sensitive self, which *as being so in contact*,* has the character of reality . . . (ante) the given but indefinite real, . . . rendered unique by being present to me in perception."[2] We have here then something which, qua being in contact with our sensitive self, is real, though indefinite.[3]

But now why should this mere being "in contact with our sensitive self" be, simply as such, any indication, much less any final guarantee, of reality? Dr. Bosanquet himself says (p. 321) that such mere contact must be transcended before we can ascribe reality to its content; and again, further, psychical content is likewise in contact with—is "given" to —our "inner sense"—is present to the mental eye equally as is this aspect of physical reality to the bodily. Is it then real, though indefinite, *in the same way* as sense-content has (simply as such) indefinite reality? Except in the sense that everything has its own reality, I do not think Dr. Bosanquet holds this view; but when, further, this indefinite real something becomes mere sensation, then reality is conferred with one hand only to be at once taken away by the other.

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[1] But even this of itself would involve a judgment and so raise the problem afresh.

[2] *Loc. cit.*, vol. i., pp. 72, 71. The passage appears to lend support to my distinction (ante, p. 305) between content and process within the mental state; here we have content and "contact".

[3] Elsewhere, however, this content is "mere sensation" . . . "in certain aspects always, and in certain phases completely, states of the self,' (vol. ii., p. 302); therefore (I take it) subjective and dependent on sense organs and nerve centres; (p. 309).

And if in this way we reduce all vivid sensed content to the same status of transience with admittedly psychical content, it would seem to be impossible for our experience ever to transcend the transient—impossible for us even to know its content to be transient. If we are ever to know reality by means of ideas (as we undoubtedly do) it appears to be an indispensable presupposition that we should become (however vaguely and indefinitely) conscious of some elements of reality quite apart from all symbolism, and prior to the formation of any significant idea-content. For if not, two problems arise:—

(*a*) How do we know that this idea-content is significant at all? and

(*b*) How do we know what it signifies?

How, that is, do we ever transcend that primal existential psychical reality which ideas admittedly have, but which we come habitually to disregard?[1]—apart from some answer to these questions, we should have, in knowledge, the necessary symbols and their formal functioning, but *not* the essential symbolised real.

I may perhaps be allowed to indicate in conclusion what appear to me to be serious difficulties of the principle—"thought adds no element to feeling, but merely reorganises its matter,"[2] if in "feeling" here we include the sense-content of percepts as being "mere sensation".[3]

We may admit all the principles laid down by Mr. Bradley[4]—that "at no moment can feeling ever be transcended—the whole would be nothing for me unless it came to me as felt—everything . . . is experienced only in feeling and . . . depends upon feeling—nothing in the end is real but what is felt"[5]—while still maintaining that "feeling" here need be throughout never other than process—activity—relation—"contact"—which may, however, be concerned with and directed upon content itself not in any phase or aspect or origin "feeling," though certainly felt, and even experienced with feeling as "a non-relational immanent felt unity".

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[1] *Loc. cit.*, vol. i., p. 68.

[2] *Ibid.* vol. ii., p. 299.

[3] And interpret it further as denoting always "content," as distinguished here from "process".

[4] With which I think I may assume Dr. Bosanquet's material agreement; *cf.* (with reference to Hegel) *Psychology of the Moral Self*, p. 61.

[5] MIND, 1909, pp. 52, 53, 63.—"Our knowledge of immediate experience". At the same time "we have always contents which are more than merely felt".

Could we indeed but thus regard the content of all experience as in one aspect feeling, then we should be no longer perplexed by the disparity between matter and mind, for their parallelism would be replaced by psychical continuity;[1] none the less would formidable difficulties remain.

There appears to me to be here, as also in Dr. Bosanquet's ascription of a psychical phase to all real content, an omission to distinguish between (*a*) what I will admit for the argument's sake to be vaguely felt content or (in this sense) "feeling," and (*b*) vivid sense-content, strictly as such. That is to say, it is certainly true that all the perceived, conceived, and known content of consciousness palpably passes out at all its confines into such vaguely and dimly felt content—the slightest introspection reveals this fact.[2] But I do not think this character can properly be regarded as being due primarily to the inherent nature of any phase of reality, and as implying that in such vague content lie the basis and origin of our known world—that *this* "feeling" is reorganised by thought, and that "nothing in the end is real but what is (in this sense) felt". Do its existence and character not rather depend on the limitations of the percipient? and again, it is never with this vaguely felt content, *as so felt*, that thought deals; for in the first place, that it is thus vague and indefinite is itself the content of a developed judgment; and secondly, thought itself, both as process and content, may also descend to this low level, which becomes thus the lowest limit of *all* the content of consciousness without any distinction;[3] and again, while content actually remains at this level, thought can make nothing of it;[4] *this* "feeling" in any case no thought can ever reorganise into our real world; its character must be changed, its level transcended, before it can become even the raw material for thought—the matter which thought can reorganise. Nor can this indispensable transcendence, this change necessarily prior to thought, be itself the result of thought; for if it be, what then is the special function of the sense organs and sensoria? For if thought can actually reorganise, so as itself wholly to constitute therefrom a real world, the vaguely felt content which is thus dependent only on the liminal and imperfect activity of the senses, what is the purpose of these, in their highly specialised forms, at all? For what function have they been developed? Let us admit to the full the existence of this vague "feeling," still we must seek elsewhere the matter which thought reorganises into its world; and we must find it, I think, in the vivid and definite content of the different sense activities, strictly as such. This, of course, we never get pure in mature experience; but neither this fact, nor its inseparable connexion with the processes of sense activity, necessarily implies that sense-content, either in its nature, or in any aspect, is "feeling". But for the positive arguments which support this view, there is here no space; nor perhaps necessity. For there is still a last consideration which precludes us, even though we should admit, again for argument's sake, that vivid sense-content *is* "feeling," from holding that reality always has a "feeling phase" —that "immediacy is . . . a phase which all or any of (the objects of thought) participate in and may totally pass into".[1]

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[1] *Cf.* here Dr. Bosanquet's *Principle of Individuality and Value*, p. 361, n.—"the physical world can never, in the last resort, put off its psychical character . . . a physical object must at least be capable of becoming psychical at any moment";—and further pp. 95, 171, 175, 192, 197 of the same work.

[2] If my meaning still remains uncertain, the reader may study, so far as possible, his own gradual falling asleep, with its growth of vagueness and indefiniteness.

[3] Though I think it should be distinguished from the "threshold of consciousness".

[4] Or no more than the "world" say of one almost blind and almost deaf.

A content can be distinguished, and determined as being what it is, only by contrast (explicit or implicit) with content different from itself; we cannot, that is, distinguish any universal[2] characteristic of reality whatever, except reality itself and its abstract and formal aspect, existence. We can then only distinguish content as "feeling," by contrast with content apprehended as not-feeling;[3] therefore either we must cognise some content as being not-feeling; or we can never cognise even feeling itself at all. Reality must include content which is not (in any aspect) feeling—not immediacy—not "existence as a mental occurrence"; nor is it sufficient to say that such content is present in reality, but in the form of objects of thought, which (as such) are not feeling—not immediate; for these, by hypothesis, have always an immediate phase or aspect; they are not immediate, that is, only in the sense that they are not *merely* immediate—while being immediate they are also something more; and were we to view them properly and in their full completeness, we should cognise this universal[1] immediate-mental-aspect, together with all their other aspects. But this I venture to think is logically impossible; we cognise any content A only by distinction from a content not-A, not from some content AX, A being once more a universal[1] phase of X. Reality then must contain content which is not, in any aspect, feeling—not immediate as being a mental occurrence; and this, I think, we have in our vivid sense—content purely as such, though for this view I must be satisfied to adduce only negative arguments.

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[1] *Op. cit.*, ii., p. 297; immediacy being the same thing as "existence as a mental occurrence," (p. 298). My argument thus takes two forms: we cannot hold this principle because (*a*) if "felt" means vaguely felt—denotes, that is, the liminal content of consciousness—then upon this thought can never even begin its operation; but (*b*) if "felt" means "sensed"—denotes, that is, definite vivid sense content—then the principle plainly does not hold true.

[2] Used here not in its logical sense, but as meaning ubiquitous.

[3] I do not however refer to Spencer's distinction (abandoned as soon as made) between feelings, and the relations between feelings. Further, a positive concrete character of some kind must be present.

Note on Dr. Bosanquet's Distinction between the Physical and the Psychical.

Dr. Bosanquet regards these characters as being distinctive, not of two types of content essentially different, but rather of two different aspects of one and the same content; of which aspects the psychical is then the primary in nature and order of existence. What now is the essence of the distinction?

"The nature of external objects," we find, "is continuous with that of the stuff of mind, and is physical, *i.e.*, has variations relative to those of other objects, as well as psychical;" (*op. cit.*, vol. ii., p. 309). But this distinction, if intended to be essentially definitive, hardly serves its purpose; for psychical content itself has also "variations relative to those of other objects," including here physical objects; firing a gun, besides its "physical" consequences, has also and equally many psychical results (fear or excitement), and these in fairly determinate degrees; hence "having variations relative to those of other objects" is a characteristic of both types and, therefore, an insufficient basis of distinction; and if we should say—"variations relative to those of other physical objects"—then the term to be defined is itself being employed in the definition.

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[1] See note 2, ante, p. 316.

IV.—THE RIGHTS AND WRONGS OF A PERSON.

(I.)

(*A Sequel to "What is a Person?" July,* 1917.*)

By W. M. Thorburn.

14. All Cruelty is Sin, and in the last analysis all Sin is Cruelty,[34] though the pain be ever so remote or so deeply disguised. The Decalogue, as it has come down to us, was defective in dealing with Cruelty; and the so-called Eleventh Commandment was a necessary supplement. The Greek words, quoted by the Synoptic Gospellers from the Septuagint, were a poetic and pernicious paraphrase of the words of *Leviticus* xix. 18: rightly construed by Rabbi Akiba,[35] as: "Do not to others what you dislike for yourself". It has been made more pernicious in English by the translation of "*agapāo*" as "love," instead of "regard" or "consider". "Love" (*phileo*) is profane nonsense; when applied outside the Family, and the passion on which the Family is founded. Love is involuntary, and therefore can never be a matter of duty. You cannot "love to order," just as you cannot "will" a cubit to your stature. The Hebrew of the O.T., in most cases, unfortunately has only one word

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[34] "Crueltie—the extremest of all vices: one selfsame master hath placed all creatures in this, his wondrous palace for his service; and they, as well as we, are of his household": Montaigne's *Essays*, II., 11 (Of Crueltie). Compare A. Christensen: *Politics and Crowd-Morality*, p. 30: "Cruelty, the cheerful enjoyment of the sorrows of others, . . . sadistical pleasure at the sight of physical suffering".

[35] Prof. Margoliouth on the *Sermon on the Mount*, in the *Expositor* of Feb., 1910, p. 144.

* The views of the writer of this paper are likely to be repugnant and, perhaps, even offensive to many readers of Mind; and the strength of the language in which they are expressed is likely to arouse resentment. None the less, the article is so interesting a document, and in some ways so instructive even for those who most strenuously disagree with it, that I have thought best to publish it. Mind exists for the free expression of all views as represented by writers of competent ability and learning. The strong language used by Mr. Thorburn seems inseparable from his thought and sentiment.—Ed. G. F. S.

(*aheb*) for *phileo* and *agapão*. There are only three instances of *hashak* (or *chashag*); which Moses Maimonides (in his *Guide*, iii., 51) appropriated to passionate love. A brief and positive form of the precept is: "Do as you would be done by": the only form really characteristic of Our Lord's teaching.[36] It is the picturesque Semitic equivalent of the still more concise and practical: *Alterum non laedere* of Roman Equity. And quite possibly, as Matthew (xxii. 39) seems to suggest, it originated as a Mosaic heading or summary of the Second Table of the Law; whose particular commands are familiar examples rather than exhaustive statements of duty.[37]

14 (*b*). The Decalogue does not mention Rape, which is undisputedly worse than Adultery; nor Arson and Extortion, which are undisputedly worse than Theft. These omissions under the Seventh and Eighth lessen our surprise at the omission of Torture and Mutilation under the Sixth: though every man fears them far more than death, except under stress of the fraudulent terrors of the Augustinian Hell. "*Thou shalt not hurt thy harmless neighbour*," would have covered nearly every mundane wrong, when extended to all of God's children by the growth of sympathetic intelligence. The whole creation groaneth and travaileth, mainly from man's inhumanity to man, and to those milder mammals whom we call "the Brutes". Among the Hebrews indeed, the merciful man was merciful to his beast. But, down to the 19th Century, few Christians were able to see that every one of God's sensitive creatures is, in some degree, every man's neighbour. In this respect, and others, Plutarch[38]

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[36] It must be noted that Luke (x. 27) puts the rhapsodic Alexandrian form of the "Eleventh Commandment" into the mouth of "a certain lawyer". And even Matthew (xxii. 39), as well as Mark (xii. 31), represents Our Lord as merely repeating an orthodox commonplace. In Matthew xix. 19, he seems to be simply paraphrasing the Tenth Commandment, after enumerating the preceding five. The word "love" is still more absurd in reference to the First Commandment. It is doubly impossible to "love" the unseen. *Fear, serve, worship, honour*, and *obey*, are the proper words for the relations between man and God. "*Unity with the purpose of God*, rather than *love to God*, is the basis of the thought of Jesus": T. C. Hall's *Christian Ethics* (1910), p. 54. "The fear of the Lord is to hate evil": *Proverbs* viii. 13.

[37] This is Philo's key to the application of the Decalogue: *De Decalogo*, § 32. See also *De Specialibus Legibus* (end of *De Puteis*, 4).

[38] Plutarch's Tractates on *Flesh-Eating* and the *Reasoning of Brute Beasts*: *Morals*, vol. v., of Goodwin's Translations. Francis of Assisi was a conspicuous exception in the Calendar of Saints. "He possessed, stronger than any man that great trait which is peculiar to minds devoid of vulgar pedantry,—a love for and sympathy with animals. . . . He recognised degrees in the scale of beings, but no pronounced ruptures.

was a better Christian than most of the Saints and Martyrs. And Jeremy Bentham was in truth the most pious man of his age and country. He scorned delights and lived laborious days, burned the midnight oil, and spent all his strength and substance, in a pure Grand Passion of Justice to Man and Beast.[39]

15. Cruelty may be defined, as the undeserved infliction of mental or bodily pain. Pain and Evil are in the end synonymous and coextensive. All Evil is Pain, ultimate if not immediate; and Pain is not merely the Index, the Measure, and the Evidence of Evil. *Pain is Evil*,[40] whenever it is not the known punishment of known misconduct, including disobedience of a known and rightful order. All other Pain comes from the Powers of Darkness and the Forces of Evil. I have no more doubt that Satan[41] cultivates and distributes

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He would not admit, any more than the Indian, that false classification, which places man on one side, and in a solid mass on the other those thousand forms of life whose exterior alone we can see, and in which the distracted eye sees only uniformity." See Renan on *Francis of Assisi.*

[39] We might say as much of Herbert Spencer, if he had not been contemporary, not only with Sir James Simpson, but also with the seventh Earl of Shaftesbury: probably the most godlike man who ever lived: as Matthew Arnold was quick to perceive. Spencer spent much time, thought, and money, in perfecting a very ingenious and effective invalid's bed: for which he refused to take out a patent. See his *Autobiography*, Appendix D, for an illustration.

[40] Aristotle: *N. Ethics*, VII., 13, 14. "Pain is in itself an evil; and indeed without exception, the only evil": Bentham's *Principles of Morals and Legislation*, ch. x. (Motives). "All pain is *per se*, and especially when in excess, destructive and even fatal in its action and effects. It exhausts the principle of life. . . . Mere pain can destroy life": Sir James Simpson, in his *Life* by Duns, 253. "Pain is an evil and comes from an enemy." . . . "Hold fast that conviction. . . . Pain is the consequence of disorder, . . . a bondage, a sign that a tyrant has in some way intruded himself into this earth of ours": F. D. Maurice: *Theological Essays*, IV., 61, 67 (in 2nd edition, 1853). "Pain and Pleasure are, we might say, the most primitive forms of the knowledge of good and evil": Paulsen's *System of Ethics*, II., 2 (p. 265 in Eng.). "There is no judgement about the good, of whose truth we are more certain, than the judgement that what is painful or sinful cannot be perfectly good": MacTaggart: *Some Dogmas of Religion*, VI., § 164, p. 209. "Pain is the correlative of some species of wrong": Herbert Spencer: *Data of Ethics*, ch. xv., § 101. Even Anselm ventured to differ from Athanasius and Augustine, so far as to allow that "tristitia et dolor" are positive evils: *De Casu Diaboli*, 26. See for Athanasius: his *Contra Gentes*, 4: "Ea vero non sunt, quae mala sunt".

[41] St. John's Gospel speaks thrice of the evil power of the Prince of this World: xii. 31, xiv. 30, and xvi. 11. Satan's "existence seems a reasonable postulate, which best helps to explain the mysterious problem of evil": A. Smythe Palmer on *The Fall of Lucifer*, in the *Hibbert Journal* of July, 1913, p. 766. Even F. H. Bradley does not regard

(if he cannot be said to beget) the microbes of Cancer, Leprosy, Syphilis, Tubercle, and Dental Decay; than that he is the instigator of Robbery and Arson, Cheating and Extortion, Vivisection and Democratic Envy.[42] Even the pain of just punishment is only an apparent exception to the general identity of Evil and Pain. Just Punishment is one form of choosing the less of two alternative pains (or groups of pains), one of which has become clearly inevitable. There is no cruelty in Fair Retaliation. For, all pleasure in or from evil-doing is a positive evil, needing to be annulled by pain.[43] Pleasure is good, only in the good and harmless. There is no greater evil in the world, than the happiness of a robber, a ravisher, or a vivisector: except the misery of his victim. On the other hand, the crippling of a robber, the castration of a ravisher, or the vivicremation of a vivisector like

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devils as impossible: *Essays on Truth and Reality*, p. 440 (note). Refer also to his *Appearance and Reality*, cc. 25 and 26.

[42] *Invidia:* "Tristitia de bono proximi": Suarez, *De Charitate*, VI., 4: where he calls it also *vitium valde humanum*. His definition seems to be translated from the words of John of Damascus: "Phthonos de, lupé epi allotriois agathois": *Pistis Orthodoxos*, II., 14. See also Slater: *Moral Theology*, I., 160. "Qui invidet diabolo similis est": Alcuin, *De Virtutibus et Vitiis*, 22. *Invidia:* "*Diaboli expressa imago*, toxicum charitatis, venenum amicitiae, abyssus mentis; non est eo monstrosius monstrum, damnosius damnum; urit, torret, discruciat, macie et squalore conficit": quoted by Burton (in *Anatomy of Melancholy*, I., 305) from "Austin. *Domin. prim. Advent*": which is apparently some Sermon not printed by the Benedictines. Augustine uses very similar language in many other places: *e.g.*, in the *Sermo de Invidia cavenda*, no. 18 of the 76 *Sermones ad Fratres in Eremo.* "Envy makes ascetics, . . . privation can reduce all to the same level": Dumont's *Bentham's Theory of Legislation*, p. 7: § 2 of ch. 3 in introductory Principles. See further in regard to Envy: especially as a human (and diabolic) peculiarity: Plutarch, *Of Envy and Hatred*, 3: Montaigne, *Essays*, II., 11 (Crueltie): Hobbes, *Leviathan*, ch. 17: and Bain, *Emotions and Will*, ch. ix, §§ 1, 6, 8, 11. The Lust of Equality, not the love of money or any other intemperance of some natural and necessary impulse, is the taproot of evil in human relations. Envy caused Satan to be turned out of Heaven, and Adam out of the Garden of Eden. Eve and Adam were not tempted with gold or any pleasure of sense. "Ye shall be as Gods," said the Serpent. The Devil was the First Democrat, and he is the Father of everything democratic. The much-trumpeted "Progress of Democracy" is mainly a relapse from Family-Morality into Herd-Morality: a reversion from the ideals of Jehovah's Patriarchal Family, to the mental and moral habits of Satan's matrilineal herd of primæval Communards.

[43] "Pleasure can only be neutralized by corresponding pain, and hence all moral evil merits pain. This is the essential element of punishment,—the infliction of pain upon a man for ill-gotten pleasure,—a pleasure unduly received at the expense of another": *The Science of Ethics* (Scholastic-Aristotelian), by M. Cronin, D.D. (Dublin, 1912), vol. i., p. 555.

Majendie or Mantegazza, would be an unmingled blessing to the sentient Universe. "Non est crudelis, qui crudeles jugulat"; quoted Gratian (II., *Causa* 23, Q. 5, c. 28) from Jerome's Commentary on the terrible 13th chapter of Isaiah. It is hurting the harmful, to heal and protect the harmless. It soothes the mental shock and fester of the party already injured, besides preventing similar pains to many others for the future. "Retaliation brings a feeling of relief": said Aristotle (*N.E.*, IV., 11). The *Lex Talionis* is Mosaic, Hellenic, and Divine. It is the simplest form of Equity, because it is so obviously the restoration of a moral balance which has been disturbed. "Pragmatically:" says William James, in his *Religious Experience* (XVIII., 448 n.): "the most important attribute of God is his punitive justice". The pains of the wrong-doer are no evil, if not greatly disproportionate to the wrong done. On the contrary, they are a solace to his victim, a safeguard to his neighbours, and a blessing to the world at large.

15 (*b*). They may even be a blessing to himself, if accepted in a proper spirit: if he has any seed of righteousness in his constitution. Nothing can be worse for his own moral health, than Free Forgiveness of savage spite or grievous wrong. "Nothing emboldens sin so much as mercy": said Shakespeare.[44] "Nothing is so inhuman as impunity": said Wellington. Nothing hardens, like Sinning without Suffering. There is no man with a grain of Honour in his carcase, who would not scorn to accept forgiveness, without making full reparation, or suffering his proper punishment. Even if kindness to the criminal were not cruelty to his future victims; Forgiveness "becomes a virtue, only when justice has done its work: . . . Before that, to forget injuries is only to invite their repetition.[45] Free Forgiveness, like a

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[44] *Timon of Athens*, III. 5. Compare his: "Mercy but murders, pardoning those that kill": *Romeo and Juliet*, III. 1.

[45] Bentham's *Theory of Legislation* (Dumont), Penal Code, Part II., c. 16. The case is of course far stronger against Forgiveness of other men's injuries by Rulers and Judges. They have no right to be merciful. Mercy is the prerogative of the injured party. As Hobbes expounded (in his *Leviathan*, II., 30): "An offence against a private man cannot in Equity be pardoned, without the consent of him that is injured; or reasonable satisfaction". In the more concise words of Locke (*On Government*, II., c. 2, s. 11): "He who hath suffered, he alone can remit". *Judex damnatur quo nocens absolvitur.* "Justice is the summary of all Virtue": said Aristotle, quoting Theognis: *N.E.*, V., 3. "Justice is the Charity of the Wise": said Leibnitz: *Codex Juris Gentium Diplomaticus*, Preface, p. 6. Generosity without Justice is only a disguised form of self-indulgence. "The foundation of what we call Criminal Law was the right of self-help on the principle of exact retaliation":

great deal of other "lofty" morality, is the invention of Impenitent Thieves. Mercy *after* Justice has always been the Method of the Divine Government. "Peccati venia non datur, nisi correcto": says the Fifth *Regula Juris* (*in Sexto*) of the Canon Law. "Deus sic disponit, quod nulli remitteretur culpa sine omni punitione": said William of Ockham: *In Sententias*, IV., QQ. 8 & 9 M. Divine Mercy and Christian Forgiveness may both be defined, as Relinquishment of Vengeance after Reparation has been made, or Justice has been otherwise satisfied. Vindictiveness, in a sense of just reprobation, is not taking *any revenge*, but only an *unjust or excessive revenge*. It is the ill-feeling of a properly punished thief; or a Californian Assassin[46] who will not take a fair beating for a gross insult; or a "cankered carle" who is not satisfied with fair compensation, but still wants to ruin his enemy for a quite reparable offence. The truly pious man is not the man who suffers evil tamely; but the man who not only does all the good he can, but cures or prevents all the mischief: in both cases without encroaching on the rights and functions of his neighbours. And as a preventive, nothing else approaches the efficacy of the Fear of Speedy Retaliation.[47] Cruelty can be promptly stopped, only by establishing an association of ideas between the infliction and the retaliation of pain.

16. There are solemn prigs and sentimental parrots, dull enough to base their indiscriminate banning of resistance and retaliation, on the words of the Lord's Prayer regarding forgiveness of trespasses. I have no ambition to reach what they are pleased to call their "moral altitude". I, for one,

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Robertson Smith's *Prophets of Israel* (2nd ed.), p. 36. Sir A. Seton of Pitmedden stoutly upholds the *Lex Talionis* as virtuous and religious, in his historical Treatise appended to Sir George Mackenzie's *Criminal Law of Scotland*.

[46] See Vachell's *Life and Sport on the Pacific Slope*, 87-8.

[47] See Tertullian's *Contra Marcionem* for an Early Christian defence of the *Lex Talionis* on this and other grounds. "Licentia Retributionis prohibitio est provocationis, ut sic improbitas astuta cessaret, dum, secunda permissa, prima terretur, et prima deterrita, nec secunda committitur, qua et alias facilior timor talionis per eumdem saporem passionis. Nihil amarius quam idipsum pati, quod feceris aliis": *C.M.*, II., 18.

Again, in IV., 16: "Aperitur nobis . . . ut unusquisque respiciens licentiam secundae injuriae a prima semetipsum contineret. Facilius enim vim comprimi scit, repraesentatione talionis, quam repromissione ultionis. Utrumque autem constituendum fuit pro natura et fide hominum; ut qui Deo crederet ultionem a Deo exspectaret, qui minus fideret leges talionis timeret."

Marcion, Basil, Ambrose, and Augustine are chiefly (and about equally) to be cursed, for the vogue of the poisonous Pauline Immorality of Self-Sacrifice, Non-Resistance, and Non-Retaliation.

do not presume to be better than Jehovah. He pardoneth and absolveth them that truly repent; and who prove it, not by cheap and hollow "apologies," but by making all possible amends. He forgives no others. The impenitent thief was not forgiven, even on the cross. Would anybody indeed have the impudence to ask Him to forgive sins unrepented? But the Prayer assumes that we have done to others, no more than we are encouraged to pray for ourselves. We are to be forgiven, "as we forgive": neither more nor less. "If thy brother trespass against thee, *rebuke* him; and *if he repent*, forgive[48] him." As an American might say: You are never bound to make a friend of a skunk; even when he seems in a funk. You may even be too kind, if you do not go out of your way to hunt him.[49] The Prayer was framed by one who knew the limitations of human nature, and its diabolic diathesis to slander and insult: who knew in particular that nobody is fuller of sly spite, than the unctuous gabbler of free forgiveness, whose catchwords bar him from open resentment. As Nietzsche pronounced in one of his best-balanced books (*The Joyful Wisdom*, I., § 47): "To me the Magnanimous One,—at least that kind of magnanimous person, who has always made the deepest impression,—appears as a man with the most powerful desire for revenge." Such a desire may be only the active phase of a very keen sense of justice: as Carlyle has expounded in the Fifth Chapter of his *Chartism* (on Rights and Mights: "It is the feeling of injustice that is insupportable. . . . No man can bear it or ought to bear it. . . . He must revenge himself, *revancher* himself, make himself good again; that so *meum* may be mine, and *tuum* thine; and, each party standing clear on his own basis, order may be restored. There is something infinitely respectable in this, and we may say universally respected." Briefly, Revenge is in rectitude, as in origin, simply Revindication writ small.

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[48] Luke xvii. 3. See also Leviticus xix. 17. The words in Luke xxiii. 34: "Father, forgive them, for they know not what they do": on which so much declamation has been based: are not found in the best manuscripts, including the *Codd. Vaticanus* and *Sinaiticus*. See Montefiore's *Synoptic Gospels*, II., 1079; Moffatt's *Historical New Testament*, p. 654; and p. 97 of *Sidelights on N.T. Research*, by Dr. Rendel Harris. Also Keim's *Jesus of Nazareth*, VI., 155-6. According to Hegesippus (in the *E.H.* of Eusebius, II., 23), the words were uttered by James, the Lord's brother, when stoned by the Jews in A.D. 62. See Hausrath's *Time of the Apostles*, IV., 132. They are first ascribed to Our Lord, though not as quoted from any Gospel, in the Ebionite *Clementine Homilies*, XI., 20: which were fabricated in the Third Century. Thence they may have crept into some Palestinian copies of the Gospel of Luke; and so into the Vulgate, when Jerome was working on it at Bethlehem. This is the sort of invention which has most distorted the real message of the Messiah. He came, not to destroy the Law, but to fulfil. His religion was the old Hebrew Religion of Righteousness, purified and vivified by his own life and teaching. There is no authentic declaration of free pardon, without penitence proved by reparation or submission to punishment, in the records of either Covenant. These too-famous words are quite inconsistent with the essential principle of Divine Government, Mercy *after* Justice; identically set forth by Luke (xvii. 1) and Matthew (xviii. 7): "It must needs be that [causes of] offences come, but woe unto that man by whom the offence cometh."

[49] "You should not allow a false generosity to destroy in your mind the distinction between right and wrong": Whateley on Bacon's *Essays*, No. 57 (Anger). As the late Robert Wallace (D.D., M.P.) shrewdly and wittily said on more than one occasion: "We are commanded to *love* (*i.e.*, justly regard) our enemies, but we are not commanded to *like* them": and therefore, he went on to argue (in a sermon on the same text reported forty-five years ago at Edinburgh), we are bound to punish them for their own good, but not to take them into the bosoms of our families. See p. 628 of his *Life*, by his brother. Also A. K. H. Boyd's *Twenty-Five Years at St. Andrews*, vol. i., p. 130 (1877). "Resentment is not inconsistent with goodwill": said Bishop Butler in his *Sermon on Forgiveness* (IX.). See also Rashdall's *Theory of Good and Evil*, I., 304: quoting from T. Carlyle and others. "Indignation or Resentment at wrong," he says "should be encouraged and expressed."

16 (*b*). The Morality of Meekness and Improvidence, vulgarly supposed to be distinctive of the New Testament, was the Morality of Levite Loafers and Pharisee Fakirs: Jewish varieties of the Religious (and often hereditary) Mendicant, who has been a conspicuous Immemorial Curse of the Semitic and Mongolian East.[50] It was the common property of Chinese and Hindu Mystics, and of all philosophers who have sought (like Epictetus[51]) to make a virtue of necessity. In the form of Anavism it insidiously penetrated the Old Testament, and in one form of Ebionism the New.[52] Common Sense has generally been too strong, for some of the more glaring absurdities of this morbid Sham-Christian

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[50] See Dollinger's *Jew and Gentile*, I., 431 (Book VI.). The *Kubeboi* and *Metragurtai* of Pessinus were the Franciscans and Dominicans of Pagan Anatolia; and were imitated by the followers of Montănus. But Begging Friars were discredited for many centuries by the conduct of the Donatist Circumcellions.

[51] The Senior Wrangler of strenuous Procrustean Make-believe: whose rancid ravings are the chief source of mediæval and modern prejudice against Epicurus. Augustine in his *City of God* (I., 17) shows himself very well deserving of the second place.

[52] See Renan's *History of the People of Israel*, Book V., chapters 4, 9. 11, 16; for the Anavim. And Moffatt's *Introduction to the New Testament*, p. 263: which admits the Ebionism of Luke. Very barefaced envy is flaunted in Luke's own exclusive Parable of Dives and Lazarus. The unctuous narrator gloats over the everlasting torture of a "rich man"; not because he had done anything wrong, but simply because he had more property than some of his neighbours.

Mendicant Morality. "Christian Communism" has seldom found sincere acceptance among those who had anything to lose. The Quakers will have none of it. And we all rightly refuse to, "take no thought for the morrow," whenever we insure our lives, or even put a shilling into the Savings Bank. But most of us are inconsistent enough, to be intimidated by the still greater absurdity of "Resist not Evil"; that Magna Charta of the Criminal Classes. "Vengeance is mine" was only Paul's imperfect quotation of some counsels of prudence to the Captive Jews.[53] They would have made matters worse by kicking against the pricks. But Jehovah knew that the Medes were arming to break down the walls of Babylon. There was indeed equal need of patient prudence on the part of the Early Christians. They could expect little justice from the Roman Magistrate, who was prone to regard them as *hostes humani generis*: "antipodal monsters" even worse than the Hebrew Zealot.

17. "Resist not evil," if preached at all in the real Galilaean Gospel, was preached only to Missionary Pioneers: as one of the marching orders of a Forlorn Hope. It was not even an Article of War for an Army: much less a section of a Code of Justice for common life. Our Lord never assumed the functions of a new Moses: never posed as the draughtsman of Codes and Constitutions. It becomes[54] one of the

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[53] From Deuteronomy xxx. 35: in Romans xii. 19. It is placed between reproductions of Ecclesiasticus xxviii. 1, and Proverbs xxv. 21; in such a way as to give a very misleading general impression of the tone of the Old Testament in regard to vengeance. The words of Deuteronomy receive their proper meaning from the author of the Epistle to the Hebrews x. 30. Compare Nahum i. 2; and Psalm xciv. 1. See Ramsay's *Cities of St. Paul*, 426-8; in regard to *Hostes humani generis*.

[54] See Lightfoot's *Christian Ministry*, p. 2; and Burkitt's *Gospel History Transmission*, ch viii., pp. 282-283. The Oratorian Father H. D. Ryder has dealt thoroughly with this pernicious heresy in his *Ethics of War*. "This is obviously a counsel of perfection addressed to the Apostles in their character of Missionaries, who are sent out as sheep among wolves, and are to win their way by the rhetoric of invincible meekness. . . . As a hard and fast rule, addressed to all men and collections of men, under all circumstances, it carries its absurdity on the face of it. It is impossible, and even if possible would be pernicious; involving, as it must frequently do, a negative violation of the moral law." *Essays* (1911), p. 236; or *Nineteenth Century*. May, 1899. Nothing could be more unlike a Code than the rambling Rhetoric of Matthew's Sermon on the Mount: "Rhetoric [afterwards] turned into Logic," as Selden said of Transubstantiation (*Table Talk*, s. 138). The words, "Ye are the salt of the earth," and "Ye are the light of the world," clearly cannot have been applied to the mixed multitude of hearers. The words of Luke's version, the Sermon on the Plain, make still clearer the limitation to the disciples. William Tallack, the well-known Quaker Secretary of the Howard Association and author of *Penological Principles*, wrote a con-

most pernicious heresies ever imagined, if applied to men of business, heads of families, or masters of any sort: to anybody in fact, who has to keep order, baffle rogues, and get work done in due time by other people. The Quaker interpretation of the "Golden Rule," as Huxley[55] acutely observed, "involves the negation of law". Magistrates are exhorted "not to bear the sword in vain"; but what can they do, if nobody will complain? And it is every bit as "vindictive," to prosecute your enemy or sue him for damages, as to knock him down or duck him in a horse-pond. Rulers and Governors never pay any real homage to the Sermon on the Mount, when there is any question of restraining themselves from the safe use of actual power: least of all those who are most democratic. Yet, if there be an "immutable moral law," such as all "Christian" Democrats profess to revere; what is wrong for one man cannot be right for a million, or a hundred millions. There is no moral alchemy in the multiplication-table.

17 (*b*). A true Lord's Anointed: a real successor of David, Saul, and the Judges of Israel: might indeed rationally claim the advantage of exemption from the general law. But the creature of popular election can have no rule of right, except what he has received through each of his real creators. Nor can individual guilt be lessened by association in wrongdoing. On the contrary, it is increased by the greater effectiveness of the attack on the injured party. Obviously it diminishes his power of resistance, even when it does not aggravate his pain and loss. Cowardly mob-crime ought always to be punished individually, with tenfold the severity due to solitary individual offences. The Penal Codes of every enlightened country treat gang-robbery as a graver crime than robbery single-handed. The wicked must none the less pay for his wickedness, because he has "followed the multitude to do evil". Nor can it make any difference, if the associated bullies disguise their individuality, under such vague and fraudulent personal fictions as *Society* and *The Community*. They cannot evade their individual responsibility to the Ruler of the Universe, for all robbery, cruelty, and extortion; though they may be strong enough to crush all mundane resistance and protest. State-Sin is even worse

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vincing letter on that limitation shortly before his death. It was printed in the *British Weekly* of 5th July, 1906. See also Hort's *Judaic Christianity*, 203, quoting Ewald.

[55] *Evolution and Ethics*, 32. The phrase is somewhat loosely applied by Huxley. He is apparently thinking of Luke vi. 29 rather than vi. 31; which is only a variant of the "Eleventh Commandment".

than Mob-Crime, because more deliberate and more difficult to withstand.

17 (*c*). Resisting evil is indeed our clearest, if not our greatest, divine duty. Without it, all the good in mankind would soon be extinguished. Resisting the devil means a great deal more than not listening to evil suggestion. It must include physical resistance of the evil men whose agency he employs. The Herald Angels proclaimed "Peace on Earth" to none but "Men of Good Will": to the just only, not to the unjust. And Our Lord declared at a very early stage of His Ministry, that He had come, not to send peace on earth, but a sword.[56] His was not the Gospel of Gush. presented to us by Methodist class-leaders and Revival-Preachers. Life ought to be made intolerable to the pitiless wicked, till they cease from troubling through repentance or elimination. The truly good man, the well-balanced man who is righteous all round, must be a good hater.[57] "The fear of the Lord is to hate evil": we are told in the Book of *Proverbs* (viii. 13). It is meet, right, and our bounden duty, to hate the cruel, and cut off the stiff-necked Assyrian from the land of the living. Cut them down, and cast them out. Why cumber they the ground? So long as evil men are common, the shikarring instinct ought not to be suppressed, but turned to a better purpose than the slaughter of harmless fellow-vertebrates. Evil beasts are now an almost negligible quantity: at least on land. But there will always be plenty of scope for legitimate man-hunting, till Envy has ceased to pollute the moral atmosphere.[58] Some day, let us hope, our gilded youth

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[56] See Schweitzer's *Quest of the Historic Christ*, 401 *et passim*. Luke says Fire, not Sword: xi. 49.

[57] "First learn thee how to hate": Newman's *Zeal and Fear* (A.D. 1832) in *Verses on Various Occasions*, XXI. "The passion of anger is in itself a noble and lofty one": J. B. Mozley on *Luther*. in his *Essays*, II., 413. And did not Spurgeon constantly say that none can truly love what is good, who do not hate all that is evil? Compare the deliberate judgement of a very modern scientific psychologist: "Disinterested anger or indignation . . . is the ultimate root of justice and of public law": W. MacDougall, *Social Psychology*, p. 75 (8th edition).

[58] See David Wilson's *Anecdotes of Big Cats*, ch. 29, pp. 198-215: for the sinful superfluity of most modern shikār. "Ethical nature may count upon having to reckon with a tenacious and powerful enemy as long as the world lasts": Huxley's *Evolution and Ethics*, 85. Envy is Hydra-headed, and has the vitality of a Phoenix or a Tapeworm. Poverty does not make Larrikins, any more than Inquisitors, Vivisectors, or Company-Lawyers. Men are not cruel and thievish, merely through being poor. These original sins batten upon the impunity generated by forensic intolerance of parental or tutorial authority, and of the Sacred Rights of Self-Defence and Fair Retaliation.

will be fain and free, to follow the noble and beneficent sports of thief-shooting, swindler-stalking, hooligan-hunting, larrikin-lashing, and vivisector-crippling; instead of mangling pigeons, harrying park-fed does, and ignobly butchering barn-door-pheasants.

18. Nobody can really hate, or fight with, Sin in the Abstract: Augustine notwithstanding.[59] Nothing is more concrete than a battle. It is a meritorious deed, and may sometimes be the divine duty of a soldier, to stand still and be shot by his foreign enemies, for the better defence of his family's and neighbour's right divine. But that can never be the duty of a householder confronted by a housebreaker. Serious Self-Sacrifice is indeed laudable,[60] or even justifiable, only if made for a higher order of being, or a terrestrial person of greater value to the world: for example, a housemother or a breadwinner, as compared with one of a dozen dependent children. Made for an equal, it is a more or less mischievous mistake. Made for an inferior (or any number of inferiors), it is a clear waste of potential good. It would be a sin against the divine world-purpose, to let Bill Sikes knock out your brains, when you have a chance of knocking out his. And made for the gain and glory of some Party, Sect, Trade-union, or other fictitious collective person (like *The Community*), it is equally foolish and wicked. For, these are merely cloaks for the high moral humbug of some caucus, clique, or conspiracy of cunning and grasping individuals. The "Universal Law of Mutual Self-Sacrifice," of which we hear so much from the pulpits of the Antinomian Cadger-Cultus, is only a Statute of Bedlam: a bit of moral bathos fit to pair with the famous economic jest, of the island where everybody gets his living by taking in his neighbour's washing. Unless you are specially called to be the prophet of some new Enlightenment, or some new Crusade against rampant cruelty, you will do most good in the world by minding your own business: if you only keep the Ten Com-

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[59] *Civitas Dei*, XIV., 6: "Qui secundum Deum vivit . . . oderit vitium, amet hominem". Henry Sidgwick remarks: *Methods of Ethics*, IV., ch. 7, § 5, p. 449: "But it is doubtful, whether human nature is capable of maintaining this distinction".

[60] "The self-sacrifice of a human being is not a lovely thing": Ruskin's *Ethics of the Dust*, VI., 68. "Self-sacrifice for its own sake is always irrational and immoral": Rashdall, *Theory of Good and Evil*, II., 70. You have only one life to live; and have no reason to suppose that any other apparently similar life (or any number of similar lives) will count for more than yours in the divine world-purpose. Self-sacrifice is neither Hebrew nor Christian; but Sidonian and Pessinuntian: in origin and principle.

mandments. 'To be honest, to be kind, to earn a little and spend a little less, to make (upon the whole) a family happier for his presence, to renounce when that shall be necessary, and not to be embittered, to keep a few friends but those without capitulation,—above all, on the same grim condition, to keep friends with himself,—here is a task for all that a man has of fortitude and delicacy. He is an ambitious soul who would ask for more.'"[61] In most cases indeed a sordidly ambitious soul.

18 (*b*). Of all the commonplaces of popular superstition, none is a more flagrant flout of historic truth than: "Self-sacrifice came into the world with Christianity". Self-sacrifice is a fungus-growth of immemorial barbarity. It came into the Punic Paulinity, which so commonly passes for Christianity, along with Pious Cruelty and Holy Mendicity: not from Bethlehem or Nazareth: not from Shiloh or Jerusalem: but from Pessinus and Pelusium, Carthage and Komāna, Sidon and the Syrian Hierapolis. Not to mention Regulus and Mettus Curtius; or the very different (and very often self-glorifying) Hellenic self-sacrifice for the City-State, which is older by five centuries (and more) than the Christian Era; the Sidonian or Pessinuntian sacrifice of the eunuch, self-made at the altar of Astarte or Agdistis, was undoubtedly practised even before Abraham's journey for the immolation of Isaac. The double lesson of that divine drama was directed against sacrifice of one's own healthy feelings, or those of any other human person. Though the time may not have been ripe for entirely rejecting "the blood of bulls and of goats": it was an early anticipation of Hosea's heavenly message: "I desire lovingkindness and not sacrifice". Self-denial, "for its own sake," or for any otherworldly motive, is pure poison: a toxic emanation from the biggest and blackest lie that Hell ever concocted: the dogma, that God can take pleasure in the pain or emotional palsy of any innocent creature. His primal desire is, that all should enjoy in moderation, whatever is pleasant to any and harmful to none. "What doth the Lord require of thee, but to do justly, and to live kindly, and to walk humbly with thy God."[62]

18 (*c*). The only self-denial of common human desire, which God can approve, is the relinquishment of sour self-assertion,

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[61] R. L. Stevenson's *Christmas Sermon*, in *Across the Plains*, p. 307.

[62] Micah vi. 8. The previous reference to Hosea is vi. 6. Compare Proverbs xxi. 3: "To do justice and judgment is more acceptable to the Lord than sacrifice".

levelling envy, and sordid ambition. He asks for no renunciation of animal functions or household affections; but for a contented acceptance of just limitation and necessary subordination. The perfection of the world can be reached, only through making the activity of most hominal bipeds, in some way subsidiary to the higher development of the rest. All the adolescent, and half at least of the mature individuals of the anthropine stock, must be Tame Men; working under direction, and finding happiness in faithful performance of reasonable service. For, nobody can "realise himself,"[63] without interfering with the similar "self-evolution" of other sensitive beings. The only Rights of Man are: Freedom from undeserved Pain; with its corollary, harmless gratification of natural appetites and emotions: and Security of Property honestly acquired; with its corollary, recompense of honest toil, sufficient for healthy conditions of family-life according to Status and Custom. The first indeed is the Divine Right of every animal. And so, with some limitation, is the second: notwithstanding paragraphs 5 and 6 of the Encyclical *Rerum Novarum* of 1891, which make Property the first distinction of human from all animal welfare. Has not the bird such a right to her nest, and the squirrel to his winter-store? But Universal Aspirations: Equal Opportunities of Self-realisation: Careers for everybody: all these aims are fatally inconsistent with the Divine Ideal World of Diversified but Harmonious Perfection. An atmosphere of jealous "Equality" stifles genius, not less than good taste and moral beauty. Under "Democratic" conditions, a successful career is always most accessible to the least deserving: to the rapid semiliterate shallowpate who is least restrained by moral scruple or gentle feeling. The main result of following up the fatuous *American Ideal:* that "Every human being should have his opportunity for his utmost development ":[64] is to make Legislators, Judges, and State-managers, out of persons fitted at the most to be newspaper-reporters or attorney's clerks. "Where merit is despised, there is democracy."[65]

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[63] "Freedom to realise himself, *i.e.*, to do as he pleases without regard for the consequences to anyone": F. C. S. Schiller, in *Eugenics and Politics: Hibbert Journal* of Jan., 1914, p. 256. "Self-realisation has always impressed me as a conundrum": H. Rashdall: *Good and Evil*, II., 62. "On the whole then, I conclude that the notion of Self-realisation is to be avoided in a treatise on ethical method, on account of its indefiniteness": is the judgement of Henry Sidgwick in his *Methods of Ethics*, I., 7, p. 92. The notion is also controverted, from the Scholastic-Aristotelian point of view, in Cronin's *Science of Ethics* (1909), I., pp. 62-63 and 433-442. And independently, in Fuller's *Problem of Evil in Plotinus* (1912), Introduction, 3-7. T. H. Green is, I think, chiefly responsible for the present vogue of Self-realisation. See his *Prolegomena to Ethics*, §§ 180-183, 274, 286, and 352.

19. The Choice of Evils is the larger part of the Art of Life.[66] We are not very often troubled to make a serious choice of pleasures or benefits. But every day we have to ask ourselves: "Is this game worth the candle?" According to William James (in *The Will to Believe*, 205): "In the casuistic scale those ideals must be written highest, which *prevail at the least cost*". Herbert Spencer's Relative Morality is the Science of the Choice of Evils in the practice of righteous living. A simple but striking illustration is furnished by the common and proper practice of pulling down one house, to prevent a fire from spreading to many other houses. But no such necessity can bar the sufferer's right to reparation, at the expense of those who are benefited by his loss; or of the whole body of his fellow-countrymen, through the machine called the State, in its primary and still principal proper function of Grand National Insurance Society against Wrong and Misfortune. It is never "*expedient that one man should* [suffer much] *for the people*":[67] even in the gravest emergencies of defensive warfare. It is always just, that all men should suffer a little, to save one from suffering overmuch. "Peccata . . . minora semper eligantur." And "Semper est licitum subire minus malum, ad evitandum majus".[68] But "*Necessitas extrema excusat*

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[64] Speech by Ambassador Page in London, 13th June, 1914.

[65] Emile Faguet: *The Cult of Incompetence*, ch. i., p. 31: summing up the teaching of Aristotle's *Politics* in Book VI. (ch. 7 *et al.*). See also his pp. 142, 145, and 153. And the third chapter of J. S. Mill: *On Liberty*.

[66] "Minus malum de duobus est eligendum," is the headline to *Cap.* I. of *Distinction* XIII. in Gratian's *Decretum* (*Pars Prima*). He allows a dispensation from *Jus Naturale* in that case, but in no other. In *Cap.* 2 he quotes from the *Moralia* of Gregory the Great, XXXII., 20 (39): "Dum mens inter minora et maxima peccata constringitur, si omnino nullus sine peccato evadendi aditus patet, minora semper eligantur." See Bentham's *Principles of Morals and Legislation*, ch. xv., s. 2: vol. i., p. 83 of *Works*. Also Dumont: *B's T. of L.*, X., p. 48. And Herbert Spencer's *Data of Ethics*, ch. 15, s. 100: "In multitudinous cases, no right, properly so called, can be alleged, but only a least wrong". Compare John Morley: *Study of Literature*, 190: "Politics are a field where action is one long second-best, and the choice constantly lies between two blunders".

[67] The old Canaanite devil-dogma, lingering among the lower Jews, and cunningly revived by Caiaphas against Our Lord. Yet our Christian Democrats talk, as if it were part of His Gospel!

[68] Francis de Vittoria: *Relectiones Theologicae*, X. (De Homicidio), 14.

a peccato, sed non a restitutione ".[69] That is, and always has been, the authoritative teaching of the Latin Church: and, I believe, of the Greek: notwithstanding the disingenuous use made of some unguarded words of Thomas Aquinas,[70] by some modern Antinomian Anthropolaters. The highborn Angelic Doctor was one of the last men in the world, who can be suspected of wishing to undermine the Eighth Commandment. He was clumsily explaining a necessary exception, not inventing a new formula to displace: "Thou shalt not steal". If he did not mention Restitution in connexion with Extreme Necessity, he took it for granted. Atonement is so clear and conspicuous a Christian Duty, that he saw no need to state it again, out of its regular and adjacent place in his System (II-II, Q. 62). He was Aristotelian enough to despise the feminine fallacy of Kant, that the Exception *disproves* the Rule. *Cessante ratione legis, cessat lex ipsa*: means something very different from that.[71] But the Necessary Reason of any law may be displaced in any particular case, by the intervention of a higher or more urgent Necessity. There are degrees in everything; and very notably in the dignity of laws and the scope of their validity.

19 (*b*). There is no assumption more clearly baseless than the vulgar fallacy, that a rigid adherence to principle shows a clear intellect or a high character. It is really the outcome

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[69] Martinus Navarrus: *Enchiridion seu Manuale Confessariorum*: XVII., 118, "Peccatum non dimittitur, nisi restituatur ablatum": says the Canon Law: *L. Sexti Decretal*, V., T 12, *Reg. Jur.* 4: vol. ii., p. 1122 in Friedberg's *C. J. Can.* These words were emphatically adopted by the Lutheran Aquinas, Philip Melanchthon: *Ethicae Doctrinae Elementa*, II. (near end): "Haec firmissima et manifestissima sunt".

[70] T. A., *S. T.*, II-II, Q. 66, A. 7. As Rickaby rightly notes (*Aquinas Ethicus*, II., 58): "What St. Thomas contemplates is the case of starving people seizing upon the primary necessaries of life to stave off instant death. He is eminently *not* thinking of a clerk, when he is hard up, taking his employer's money." If there be any such thing as "lofty morality," the praise is best deserved by the honest man who is faithful unto death: the man like Kipling's Macandrew, who would "sooner starve than steal". As to Restitution and Communism, see Rickaby's *Moral Philosophy*, p. 281. *Contra*: A. J. Carlyle's *Mediaeval Political Thought in the West*, II., 142.

[71] *Exceptio probat* (*firmat*) *regulam*, is commonly quoted without the original completion: *in casibus non exceptis.* See Trayner's *Latin Maxims* (in Scots Law), n. 202. "Panormitanus" (Nicolas Tedeschius, Archbishop of Palermo, 1437-45), the great Canonist of the fifteenth century, adds a further qualification: "Exceptio aliquorum casuum non firmat regulam in aliis qui alio jure non includuntur sub regula": *In Libros Decretalium*, III., Titulus, *De Sepulturis*, c. 9, s. 1, p. 137 c. Tertullian applies the argument of *cessans ratio* in his *Monogamia* (7), with especial reference to the Mosaic Levirate.

of a wooden head, or a stony heart, or most frequently of both. "You may almost always detect the severe, hard, cruel man, by his dislike, even in matters of the intellect, to admit of exceptions," declared the well-balanced and widely-experienced Sir Arthur Helps, in treating of *Animals and their Masters* (IV., p. 90). The typical Man of Principle is a flinty fool; an atrophied and indurated schoolboy, who has never learned the great mellowing lesson of life to the Practical Reason: that Circumstances alter cases:[72] that formulas of Morality are not the slave-drivers, nor in maturity even the drill-sergeants, but only the finger-posts of our march from the cradle to the grave.[73] "Certain ideas of uniformity," said Montesquieu, in his *Spirit of Laws*, XXIX., 18: "infallibly make an impression on little souls. . . . Does not a greatness of genius consist rather in distinguishing between those cases in which uniformity is requisite, and those in which there is a necessity for differences."

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[72] The wisest and widest of all proverbs: *Est modus in rebus* being a good second. That was Horace's way of saying: There are degrees in everything: and, "Let your moderation be known to all men". In *Satire* I., 3 (96-124) he riddles with fine contempt the supreme Stoic stultitude: afterwards a cornerstone of Augustinity: *paria fere peccata*: one sin is as bad as another. See Pearson's *Fragments of Zeno and Cleanthes*, 132-133; Lactantius, *Div. Inst.*, III., 23; and Cicero's *Paradox*, III., 25: *Omnia peccata paria.* It grew out of another Stoic absurdity: There are no degrees in truth. See Sextus Empeiricus: *Adversus Logicos*, I., § 422; and D. Laertius: *Lives*, VIII., *Zeno* 64.

[73] Kant's declamation, that "even to save the whole world we have no right to tell a falsehood"; and Fichte's boast, "I would not break my word even to save humanity"; may be dismissed as frantic foolery. But, "frantic fiendliness" is the only fit label for Newman's unwarranted pronouncement: "The Catholic Church holds it better for all the many millions on it [the Earth] to die . . . in extremest agony, than that one soul should commit one single venial sin": *Anglican Difficulties*, VIII., 199. *Contra*: See Gratian's *Decretum* (*C. J. Can.*), *Pars* I., D. 13, cc. 1 and 2: Migne, *P.L.*, 76 (p. 659). *Cap.* 2 quotes from the *Moralia* of Gregory the Great (XXX., 20, § 39). See also Waterworth: *Council of Trent*, p. 274; in regard to Dispensations, under the 18th chapter of the Decree on Reformation at the 25th Session. Juan Medina, the Franciscan Theologian and Casuist of Salamanca, held that Venial Sins did not even necessitate Confession: *De Penitentia* (1550), Tr. I., Q. 3. The Jansenists discouraged such Confession; and even their hostile critic Perrone (1843) declared it laudable, but not compulsory: *De Poenitentia*, § 175. Leslie Stephen rose to eloquence in his generous indignation at Newman: *Science of Ethics*, IX., § 29. And Newman himself, at a mellower stage of his mind, admitted in his *Grammar of Assent*, VI., 2, and X., 2: "All laws are general; none are invariable": and "No religion is from God, which contradicts our sense of right and wrong". For Kant, see his brief *Essay on Benevolent Lies*; and for Fichte, his *Life*, II., 57: quoted in Paulsen's *System of Ethics*, III., ch. 11.

19 (*c*). The old traditional *Fiat justitia ruat coelum*[74] differs from Mr. Justice Maule's cynical *Fiat jus ruat justitia*, only in being stupidly instead of cleverly iniquitous. The falling of the heavens (as a consequence) would be conclusive proof that justice had *not* been done. For you cannot, logically or morally, separate any act from its consequences. The consequences indeed *are* the act, or all but the starting-point; and from them it gets its objective character of preponderant good or evil. The soundest principles are at best only machinery. Bad practice can never be even good theory: as Bentham pungently proved in his *Book of Fallacies* (IV., ch. 9, § 3). "The known consequences of an action must always be relevant to its morality," declared Leslie Stephen in his *Science of Ethics* (IX., §§ 29 and 37). "Whether it is a good thing or a bad . . . must be decided by direct reference to its effects," pronounced his juridical brother Fitzjames in *Liberty, Equality, and Fraternity*, 257 (2nd edn.). Patent practical evil is the best of all proofs, that the application of a Formula has become a Folly or a Fraud. Hard Cases do not *make* bad law. They *prove* Bad Law (or Bad Judges), and the urgency of reform or removal. Individual rightfulness is the Be-all and the End-all of every judicial proceeding. The relief (or prevention) of hard cases is the very *raison d'être* of every system of equity. "This in fact is the nature of the equitable," ruled Aristotle (*N. Ethics*, V., 14): "it is a rectification of law, where a law fails through generality". Kant, in his *Metaphysic of Law* (p. 50 of Hastie's, or 182 of Semple's Translation) writes of a Court of Equity as a "Contradiction and Absurdity". But Aquinas was a sound Aristotelian on this question; repudiating the rigidity of Augustine's *De Vera Religione* (c. 31). "Non fuit possibile aliquam regulam legis institui, quae in nullo casu deficeret": he declared in *S.T.*, II-II, Q. 210, A. 1 (R).

19 (*d*). Formulas are the food of adolescence, but the poison of maturity. All rational rules are made to be broken on

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[74] Not, as frequently supposed, a maxim of English (or any other kind of) Law; though Lord Mansfield used it in 1768, when reprobating the half-veiled threats of John Wilkes and his counsel: *R. v. Wilkes*, Burrow's *Reports*, p. 2562. Four years later, he repeated the phrase in the still more famous case of the slave Somersett. I can find no previous legal authority of any sort; and conclude that its origin is more probably Patristic (or Scholastic) than juridical. Jeremy Taylor (in his *Doctor Dubitantium*, I., ch. 2, R. 8, § 35), attributes the words: "*Fiat jus et pereat mundus*," to Augustine; and they are certainly consonant with his general tone of thought. But I cannot locate them. "*Fiat jus, pereat mundus*" occurs in Luther's *Table Talk*: Hazlitt's edition. no. 733.

emergency, at the breaker's risk of mistake and consequent reparation. As Donne has admirably said in his *Biathanatos* (I., D. 2, § 2, ¶ 6): "No law is so primary and simple, but it foreimagines a reason on which it was founded; and scarce any reason is so constant, but that circumstances alter it. In which case a man is Emperor of himself." "*Circumstances alter cases*, is indeed the Emperor of all Proverbs.[75] And no more thrilling illustration of this Grand Axiom of Justice can be found in any literature, than the magnificent lyrical tragedy, which Sir Alfred Lyall has disguised (from his casual reader) under the tame title of "*Retrospection 1857-1882*". It might well have been paired with another of his three greatest poems, as *Virtue in Extremis*. The grey-haired Panjab Commissioner, who tells the stirring story of his youth on the sod of the Psychologic moment, did the Right Thing, the Only Right Thing, on the spur of that divine necessity which knows no human law. Motive is immaterial, when intention is just. He rescued two worthy lives from untimely death (or worse) in the only possible way; by anticipating for a few minutes the inevitable death of a worthless suicidal maniac. Yet there are petrified prigs, on the King's Bench as well as the Bench of Bishops, who would brand him like Uriah's King, as a Murderer with Adultery in his heart! And the superficial conventional critic would not venture to pronounce them wrong. But Lawless Love was not his intention, nor even his conscious Motive. If it had been, we could not praise him. He killed to save: his own life as well as hers. He could not desert her; and he must otherwise have died fighting hopelessly, by the side of her maniac master. In pure chivalry he might, and probably would, have done what he did: for any woman.

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[75] Alexander of Hales has defined Moral Circumstance (in his *U.T. Summa*, II., Q. 96, M. 5): "Circumstantia dicitur proprietas personae vel actus pertinens ad diminutionem, vel ad aggravationem peccati. . . . Quis, quid, ubi, quibus auxiliis, cur, quomodo, quando." In M. 5, A. 1 (R), he finds: "Malum ex intentione continebitur sub malo ex circumstantia": as the wider genus. "Respondeo; inter omnes constare, actum esse bonum vel malum ex circumstantia": wrote the Casuist Juan Azor: *Institutiones Morales* (1600), II., c. 3, p. 150. And his cautious contemporary Valentia allowed that the object of an action: "includit etiam circumstantias": *Commentaria Theologica* (1600), *Tom.* II., D. 2, Q. 14, § 2, p. 244. This principle was generally followed by the later Casuists; and Paley was not less emphatic than the Jesuits whom Pascal abhorred: "There are no maxims," he affirmed, "which do not *bend* to Circumstances": *Moral Philosophy* (1785), I., 5. Even the High Anglican, Jeremy Taylor, had admitted the duty of considering: "Accidents, Circumstances, and Collateral Inducements": in his *Ductor Dubitantium* (1660), I., ch. 4, Rule 6. At the outset (I., ch. 1, R. 1) he had defined Conscience, as: "The Mind of Man, governed by a Rule, and measured by the Proportion of Good and Evil, in order to Practice". This is quite consonant with Austin's Utility, and with the Ethical Pragmatism of the Twentieth Century, as expounded in Dewey's *Outlines of a Critical Theory of Ethics*, p 201 (Part III., ch. 1, § 63): "Conscience [or the Consciousness of Obligation] means the consideration of *each case in itself*, measuring it not by any outside Code, but in the existing moral situation". Compare the bold words of William James, in *The Will to Believe*, pp. 206-209: "The Highest Ethical Life . . . consists at all times in the breaking of Rules, which have grown too narrow for the actual case".

20. Choose the lesser evil;[76] or more fully expressed: "You may, and generally ought to do a smaller certain evil, for the prevention of a probable and imminent greater evil." That indeed is the footrule of all practical morality, and must be distinguished with the keenest vigilance from the unctuous trickster's: "Doing evil that good may come":[77] with which it is so often, and so easily confounded. Count Paul von Hoensbroech, as he betrays to the competent critic in chapter 24 of his *Fourteen Years a Jesuit*, failed to grasp this distinction, and therefore failed in his suit against Chaplain Dasbach,[78] at Cologne in 1905. Though in particular cases, the Jesuits (like their enemies) have done evil that good might come, they have never set out any principle of so doing. He might indeed have made out a better case against the Latin Church as a whole, on the ground of certain words used by the Council of Trent: "The most sacred canons are

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[76] "All rational conduct is, in the final resort, preference of a greater pleasure to a less, or of a less pain to a greater." Bain, *Emotions and Will* (1875), ch. i., p. 25. "Even Judaism and Christianity, like Greek Philosophy, were simply inspired by the pursuit of happiness": affirms George Santayana: *Egotism in German Philosophy* (1916), p. 151. Compare Aristotle: *N. Ethics*, II., 9. Jeremy Taylor: *Ductor Dubitantium*, I., ch. 5, R. 8: *Works*, XII., p. 157. Spinoza: *Ethica*, IV., *Prop.* 20 (Note): and *Tractatus Th. Pol.*, XVI., p. 274, in *Eng. Tr.* Also W. Macdonald, *Moral Science*, p. 4. Mr. Bradley's best epigram is relevant: "The world is the best of all possible worlds, and everything in it is a necessary evil": Preface (XIV.) to *Appearance and Reality* (2nd edn.). Origen admitted that there are necessary evils which can be understood, neither as results of sin, nor means of training: *Contra Celsum*, VI., 53 and 55.

[77] *Epistle to the Romans* iii. 8. The grand exploiter of the fiend-fallacy which Paul repelled, is not the Proverbial Jesuit, but the Actual Vivisector; who pretends that he inflicts atrocious agony, for the ineffably paltry purpose of possibly prolonging the mere existence of a mere human being.

[78] See also his separate collection of Extracts of Casuistry: *Der Zweck heiligt die Mittel*.

to be exactly observed by all; and, so far as this is possible, without distinction. But if any urgent and just reason, *and at times a greater good*,[79] shall require that some be dispensed with, this shall be granted": Session XXV., chapter 18 of the Decree on Reformation. But even this after all seems to be nothing but common sense rather clumsily expressed. The rigid rule is the rankest wrong. No statement of law can approach perfection, so nearly as to exclude the need of Dispensation.[80] The righteousness of every legal phrase is a matter of probability and approximation. Occasional partiality is a far smaller evil than the constant blind cruelty of inflexibility. The rigour of Rhadamanthus, and the immobility of the Medo-Persian Laws, were characteristic of prescientific adolescent intellects; just beginning to play with principles, and making "little tin gods" of their playthings. The rawest cornet on a drumhead court-martial, or the most corrupt Kadi who ever took bribes with both hands under a palm-tree, was more frequently just than an Eldon or a Wensleydale;[81] and never caused a hundredth part of the misery daily inflicted by their cast-iron indifference to obvious right and wrong: not to mention their Cost-fabricating collusion with their own Trade-union.

20 (*b*). The true Jesuits, in the old objurgatory sense, are the Vivisector, the Forensic Monopolist, and the Neo-Catholic (or Modern Puritan) Mobflunkey: the Jesuit of the Gutter: the enemy of the Eighth and Tenth Commandments: the Cultivator of Envy: the Sanctifier of Spite: the Justifier of Collective Theft: the *Advocatus Diaboli* (in a new sense), always ready with some pious plea, for any force or fraud that may happen to suit his retainer's mundane political agent. But the impious forgers; who so cunningly exalt themselves by making a little furtive deity out of every hominal biped; would often hesitate, (however much they might desire), to put the brand of "Jesuitry" on certain words of Thomas

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[79] Waterworth: *Canons and Decrees of the Council of Trent* (Eng.), p. 274. Compare Rickaby's *Aquinas Ethicus*, I., 299 (*S.T.*, I-II, Q. 97, A. 4): "because it would hinder some greater good": (quia vel per hoc impediretur aliquid melius). And the "Spes magna in posterum" of Grotius: *De Jure Belli et Pacis*, II., *cap.* 20, § 26: which, however, refers only to Dispensation from Punishment. See also Harnack: *History of Dogma*, II., pp. 343-344.

[80] *Summum jus summa injuria:* Cicero, *D.O.*, I., 10. Compare Terance: "Summum jus saepe summa malitia": Syrus to Chremes, in *The Self-Tormentor*, V., 4. Jeremy Taylor in his *Ductor Dubitantium* (I., ch. 5, Rule 8), approves of Dispensations, and the prevention of a greater sin by a smaller: *Works*, XII., pp. 161 and 157.

[81] The Kadi after all usually refunded to the loser.

Aquinas:[82] "To kill a man who is a sinner may be good, as to kill a beast: for, worse is an evil man than a beast, as The Philosopher says". Some Men of Light would now add, that it is not less good to kill a bad man, than bad to kill a good man. The presumptive criminality of killing another must, on the whole, vary inversely with the evil conduct and dangerous disposition of the person killed. But we may have also to consider matters of world-utility and biologic gradation, as well as family-injury, quite apart from any subjective moral character: as in the case of a mad dog, or of a homicidal maniac running amuck. Nobody can really murder a torturer, a mutilator, a ravisher, a robber, a homeburner, an obscene slanderer, a confiscator or embezzler of family-income, or an inoculator of loathsome or painful disease. For, they are all worse than a typical murderer, because more fruitful of wrongful pain. To kill one therefore must leave a balance of justice on the side of the executioner. To shoot them at sight in the act, the pursuit, or the attempt, is no sin, but a service well pleasing to God. Death is the cheapest, kindest, most effective cure of crime. In common life nobody deserves better of the republic, than the householder who blows out the brains of a housebreaker. Rogues are rubbish, and vagabonds vermin. Robbers have no right to life or limb; and nothing matters much that happens to a riotous ruffian. For Righteousness is a matter of Reciprocity;[83] and whosoever breaks the Seventh, Eighth, Ninth, or Tenth Commandment, forfeits thereby the protection of the Sixth: till he has made full reparation and suffered appropriate punishment.

21. We abhor acts of dishonesty, impurity, and irreverence, even when they are not visibly productive of cruelty to any creature directly concerned; because we have clear and direct divine commands. Nevertheless we may without impiety surmise, that these commands are not what men call "arbitrary," but have some reason which we are capable of understanding; though in some particular case it may not come within the range of our perception. And an obviously

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[82] *S.T.*, II-II, Q 64, A. 2, § 3. T. A. is referring to Aristotle's *Politics*, I., 2. Compare Plato: *Laws*, VII., 808: "A boy without discipline is the worst of wild beasts". Jeremy Taylor is quite Aquinian in regard to exterminating criminals: *Ductor Dubitantium*, III., ch. 2, R. 1, § 10.

[83] "Tsze-Kung put to him the question: *Is there one word upon which the whole life may proceed?* The Master (Confutsius) replied: *Is not Reciprocity such a word?*" *Confucian Analects*, XV., 23. See also *Analects*, V., 11; and *Doctrine of the Mean*, XIII., 3: for Chinese forms of the "Golden Rule". Both are given in Legge's *Confucius*.

likely reason is, that not merely do the forbidden acts, ultimately or indirectly, cause some sort of wrongful pain to some of God's creatures on earth, but also directly cause mental anguish in higher spheres to the higher beings of the universe; and not only to angels and archangels, and the spirits of the Just made perfect, but even to the Most High God, whose sense of harmony and perfection may thus be wounded. We may, in all reverence, make such use of our intellects; as to believe that one reason for obeying commands, which we do not quite comprehend; is the moral certainty, that God can not only see, but feel painful consequences, which are beyond the limits of our mundane observation and induction. To us, as to Grotius, Ockham, and Duns Scotus,[84] everything must be Right or Wrong, so far as we know it to be in accord or discord with the Will of God. But nothing is more impious, than to imagine God as giving orders in despotic caprice: except the Anselmian "Hyper-Calvinist" presentation of Him, as a compound of vindictive fiend, self-cheating fool, and Rhadamanthine forensic juggler. The man who robs Peter to pay Paul is a very scrubby sinner; [85] who only adds hypocrisy to dishonesty. But the fancied "God," who could roast Peter everlastingly for the fault of a prehistoric Paul, is beyond all comparison with the merely contemptible. Vicarious virtue may be the meanest sort of sin; but vicarious vengeance is certainly the vilest iniquity: and the stupidest.[86]

[84] Duns Scotus: *Opus Oxoniense*, I., D. 2, Q. 1; and more especially IV., D. 46, Q. 1 (3rd *Scholium*): vol. ix. of *Op. Om.*, 251-253 (Wadding). Grotius: *De Jure Belli et Pacis*, I., 1, § 6. Ockham: *Centiloquium*, conclusio 5: and *Comm. in Sentt.*, *Dist.* 48. Suarez is a qualified adherent of Scotus: "Dei Voluntas non est tota ratio bonitatis aut malitiae": *De Legibus*, II., 6, § 11. Also, "Deus haberet Legem sibi Naturalem, respectu suae voluntatis": II., 6, § 6. But Paley is uncompromising: "We assign as the only ground of the subject's obligation, the Will of God, as collected from expediency": *Mor. Phil.*, VI., 3. Compare John Austin: Utility is "the Index to the Will of God": *Province of Jurisprudence*, Lecture II., p. 111.

[85] "Non est aliquid rapiendum divitibus, ut detur egenis": sic sonat Gratianus: *Decretum*, *Causa* XIV., Q. 5, *cap.* 3: p. 739 of Friedberg's *C. J. Can.* He adds, quoting obscurely from *Augustinus in Homelia*: "Forte aliquis cogitat et dicit: multi sunt Christiani, divites, avari, cupidi; non habeo peccatum, si illis abstulero, et pauperibus dedero. Unde enim illi nil boni agunt, mercedem habere potero. Sed hujusmodi cogitatio ei Diaboli calliditate suggeritur. Nam si totum tribuat quod abstulerit, *potius peccatum addit quam minuat.*" Friedberg's reference to Sermon 287 is not, however, verifiable, by means of the Benedictine Index or L'Enfant's Augustinian Concordance.

[86] "Vicarious punishment is pure injustice, and vicarious guilt pure nonsense": Gwatkin's *Knowledge of God*, I., 217. "The idea of substituted

22. Modern Philosophers, and Men of Science, have never yet properly acknowledged their debt to the early Franciscan and Dominican Scholars, who did so much for liberty and lucidity of thought, by making Aristotle an informal Doctor of the Church.[87] And let us give thanks to God for Great Count Albert, and John Duns Scotus; who in the fiendliest age of Rack, Stake, and Dungeon, were not afraid to strike at the root of Anselm's poison-tree of anthropolatry! The Word, they said, would have been made Flesh, even though Adam had never sinned. "Si nec fuisset Angelus lapsus, nec homo, adhuc fuisset Christus sic praedestinatus: imo et si non fuissent creandi alii quam solus Christus."[88] The Incarnation was a predestined incident of the Father's eternal purpose for the Universe. "God so loved *the world*" (*Kosmos*): wrote St. John (iii. 16): not merely Anselm's arrogant monopolising anthropine biped. The Christ came among men, we may now believe, not merely to baffle Satan's

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vicarious punishment would never for a moment be defended by a modern Christian, except with a view to bolster up an obsolete theological tradition": Rashdall's *Theory of Good and Evil*, I., 312. According to Harnack: "The *Father* who shows most clearly the vicarious idea of the passion and death of the God-Man": is the malevolent Cyril of Alexandria, the torturing murderer of Hypatia; nephew and successor of the equally odious Patriarch Theophilus, who procured the posthumous condemnation of Origen.

[87] Francis Bacon complained that his detested *Scholastici Philosophi*: "Hoc insuper usi sunt, ut contentiosam et tumultuariam Aristotelis Philosophiam corpori religionis inseruerint". *Cogitata et Visa* (1607), § 7, p. 596, in vol. iii. of *Works* (Spedding). The achievement of Albert had been attempted, with learning and wisdom, but with little immediate effect, by the Alexandrian John Philoponos († *circa* 570). John's exposition of Aristotle had indeed far less influence on the development of Christian Theology, than the Platonic criticism and speculation of the Athenian Pagan Proclus († 485). The ideas of Proclus were quickly taken over by the Pseudo-Dionysius; whose works, after being translated by John Scotus Erigena († 880), became Latin Christian Classics under the powerful advocacy of Hugo of St. Victor († 1141). Voltaire had some reason for saying: "Chretiens (sont) Platoniciens": in his *Dieu et les Hommes* (ch. 38, Trinité). Christianity (Catholic or Calvinist), as he saw it in France, seemed synonymous with Augustinity. Dean Inge has recently declared: "Our creeds are the formulas of victorious Platonism": *Personal Idealism* (1907), ch. iii., p. 67. The early "Adoptians" were, he says, Aristotelians. So says Harnack likewise: *Hist. Dogma*, vol. iii., p. 25. And the theology of the Greek Church retained some "Aristotelian elements," through its most authoritative Doctor, John of Damascus: *H.D.*, iii., 244 and 283.

[88] Duns Scotus († 1308): *Reportata Parisiensia*, Book III., Dist. 7, Q. 4 (2nd Scholium): Wadding's edition of *Op. Om.*, Tom. XI. (part 2), p. 457: "Utrum Christus sit Praedestinatus esse Filius Dei". Also his *Opus Oxoniense*, III., D. 7, Q. 3 (on Predestination): III., D. 20, Q. 1 (on Anselm): and IV., D. 1, Q. 3 (on Adam).

meddling with their allegiance but to remove the curse of Cruelty from all God's children. If it be true that He died to save men and women; it is not less true that He died to save rats and cats, and dogs and frogs, and mice and monkeys, and all the other victims of the "Sporting" Savage or the Vivisecting Hellhound. The Universal and Most Subtle Doctors have gone far to break up our narrow anthropocentric conception of the Divine Fatherhood. Origen, long before them, was fain to extend the benefit of the Lord's Death to angels in danger of falling, and devils who might be rescued.[89] Let it be our task, to stretch that blessing in another outspread; to the cattle and horses who suffer from our military and commercial callousness; and to the rabbits and guinea-pigs who are chosen for "scientific" torture, because they have so little power of biting and screaming.

22 (*b*). Albertus Magnus (†1280), though less decided than Scotus in expression, clearly refuses to accept the dogma of Anselm as conclusive. "Solutio incerta est. Sed quantum possum opinari, credo quod Filius Dei factus fuisset homo, etiamsi nunquam fuisset peccatum. . . . Credo hoc quod dixi, magis concordare pietate fidei": *In Sententias*, III., D. 20, A. 4. He denounces the Ambrosian Paschal tradition of chanting "Felix culpa," because: "Peccatum non cooperatur in bonum, nisi per accidens". Alexander of Hales (†1245), though coupled with Scotus by Suarez (D. 5, S. 5, s. 6), was not so bold as Albert. In his *Univ. Theol. Summa*, III., Q. 2, M. 13; after fully setting out, with apparent sympathy, the notion of Dionysius "The Areopagite" (*De Divinis Nominibus*, 4); that God became Incarnate, because He desired to diffuse His beatitude over every rational creature, he feebly concludes: "Ad oppositum est autoritas Ecclesiae in praefatione Cerei" (Benedicti). Bonaventura (†1274) halts between the two opinions as to the *Incarnationis ratio praecipua*: "quod uterque modus catholicus": *In Sententias*, III., D. 1, A. 2, Q. 2 (Conclusio). Thomas Aquinas (†1274):

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[89] Origen: *De Principiis*, I., *cap.* 6, §§ 2, 3, 4; and *cap.* 8, §§ 3, 4. Farrar's *Mercy and Judgement*, XI., 337. For Patristic foregleams of the Scotist pronouncement, see Harnack's *History of Dogma*, Part II., Book I., ch. 6 (vol. iii., 302-303, in English). And compare Tixeront's (R.C.) *History of Dogma*, vol. ii., pp. 148-154, and 378-381 (in English). Probably the clearest anticipation of Anselm's *Cur Deus Homo* is in Augustine's *Sermo*, 174 (§ 2): "Si homo non peccasset, Filius Hominis non venisset". Denys Petau (Petavius), the most learned of all Jesuits, has collected many Patristic and Scholastic opinions, relevant to Anselm's: "mirifica sententia de absoluta necessitate Incarnationis": and the contrary contention of Scotus; in his *Dogmata Theologica*, Tom. IV., *De Incarnatione*, II., *cap.* 13, §§ 6-8, and *cap.* 17, §§ 7-12.

S.T., III., Q. 1, A 3: pronounces gently in favour of Anselm: clinching his third reason with the "Felix culpa" of the Praeconium Paschale (*Benedictio cerei Paschalis*). In his second he argues that the union of God with Creature is quite beyond the scope of Nature's Perfection. Suarez († 1617) is frankly Scotist: *De Incarnatione*, D. 5, S. 5, s. 8: "Etiam si homo, suae libertati relictus et permissus dicto modo, non esset peccaturus, nihilominus propositum Dei de incarnatione facienda consistere posset, et habere suum effectum: et hoc modo vera est sententia affirmans, etiam si homo non peccasset, Deum fore incarnandum".

22 (*c*). In our own times, the Roman Professor Pohle of Breslau inclines in the same direction. "The Scotist theory recommends itself by its sublimity": he says in his *Soteriology*, p. 34, as translated by Preuss. But he ascribes the origin of it to Abbot Rupert of Deutz († 1135): a credit which his references do not justify. Rupert is not noticed by Hales, Albert, Thomas, Bonaventura, or Scotus, in this connexion. In one place: *De Gloria Filii*, 13 (Migne, *P.L.*, 168, p. 1628); he does indeed mention the theory for discussion. But he rambles away to attack a fantastic speculation about the need of the Fall, for filling up the ranks of the Angels after depletion by Satan's revolt; because otherwise, it was argued, there would have been no multiplication of men for Election to the heavenly host. This had already been reprobated by Augustine, in the *C.D.*, XIV., 23 and 24: where he expounded his own fantasy of Paradeisiac reproduction. In another place: *De Sancto Spiritu*, II., 6 (*P.L.*, 167, p. 1610): Rupert distinctly says: "Nam nisi fuissemus peccatores, causa, cur tu assumi in Deum deberes, nulla fuisset." The Anselmian Petavius gives both passages (and others) in his *De Incarnatione*, II., 17, § 12: criticising Rupert as inconsistent. If Scotus had any forerunner in the 12th Century, he was not Rupert, but Abelard: the first and greatest of Scholastic Philosophers. Abelard's *Theologia Christiana*, before his condemnation by the Pope in 1141, contained the following judgement; which has been preserved by his adversary Bernard: *P.L.*, 182, p. 1063. "Sed, ut nobis videtur, nec Diabolus unquam jus aliquid in homine habuit, nisi forte Deo permittente, ut carcerarius: *nec Filius Dei, ut hominem liberaret*, carnem assumpsit": *Tractatus de Erroribus P.A.*, *cap.* V., § 11; (*Error* IV.). This question however was not among the 158 debated in Abelard's earlier *Sic et Non* (A.D. 1115); although No. 69 is headed: *Quod Filius Dei praedestinatus sit, et contra.* Canon Bigg, in his Bampton Lectures on *The Christian Platonists of Alexandria* (Lecture

VIII., 340), summed up the case by saying: "As regards the doctrine of Redemption he [Augustine] still occupies the ground of earlier theology. It was reserved for Anselm, centuries afterwards, to array the Justice against the Goodness of God, and thus to complete the resemblance of Christianity to its ancient deadly foe."[90]

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[90] The foe was Gnosticism. The "earlier theology" was the doctrine of Ransom from Satan: of which Bernard of Clairvaulx was the last uncompromising exponent. Peter Lombard (*SS.* III., 19) followed him dubiously, under the disturbing influence of Abelard. In a note on the same page, 340, Canon Bigg remarks: "According to Anselm, then, Christ redeems mankind from God": instead of from a Demiourgos. No Gnostic ever sank to so low a depth of heresy. The germ of Anselmity may however be found in Augustinity, as pointed out in note 89. For Abelard's theory of the Atonement; which was neither that of Anselm, nor that of Bernard and Origen; consult Dean Rashdall's *Doctrine and Development*, ch. VIII., 128-145. Refer also to Cousin's edition of Abelard's *Opera*, II., 207: *Comm. in Ep. ad Rom.* (ch. iii., v. 21 ff.), Book II., Q. 1, *Solutio;* for the extant portion of the sentences quoted by Bernard, in support of his Fourth *Error* of Peter Abelard. Bernard's full text is appended on p. 767. The corresponding references to Migne are *P.L.*, 178 (836) and 182 (1050). Anselm and Bernard might contend for the title of Last of the Fathers. But neither can be called First of the Schoolmen: as some have called the former. For, both were rabid enemies of Reason; and the essence of "Scholasticism" was the application of Reason to Theology.

(*To be continued.*)

V.—DISCUSSION.

THE MYTH OF OCCAM'S RAZOR.

1. From the middle of the Nineteenth Century, nearly every modern book on Logic has contained the words: *Entia non sunt multiplicanda, præter necessitatem:* quoted as if they were the words of William of Ockham. But nobody gives a particular reference to any work of the Singular and Invincible Doctor: sometimes also, as on the title-page of his *De Sacramento Altaris* (1513), described as the *Venerabilis Inceptor* (of "Terminism"?). We turn in vain even to Sir William Hamilton, *facile princeps* (among English writers) in philosophical learning; or to his nearest rival, his disciple Dean Mansel. And my own fruitless inquisition for the formula, in those works of Ockham which have been printed, has led me to disbelieve that he ever used it to express his Critique of Entities.

2. This disbelief is further justified by what I find, and cannot find, in laborious recent histories of Mediæval philosophy. Haureau (in his *Philosophie Scholastique*, vol. ii., chap. xxviii., pp. 438, 442, 446); Erdmann (in his *History of Philosophy*, vol. i., § 216); and De Wulf (in his *Mediæval Philosophy*, § 368); all concur in giving another set of words, as those usually employed by Ockham: "Pluralitas non est ponenda (or Non est ponenda pluralitas) sine necessitate". They do not even mention the common form of the *Novaculum Nominalium.* Nor does Prantl, in his large collection of citations (*Geschichte der Logik*, iii., pp. 327-420); though one of them (Note 758) contains: "Nunquam ponenda est pluralitas sine necessitate". Nor does Stockl, in his very full *Geschichte der Philosophie des Mittelalters*, §§ 259-266, pp. 986-1021 in the second volume. He selects: "Frustra fit per plura, quod potest fieri per pauciora": as distinctive of Ockham in this connexion. So did the earlier historian Tennemann: *Geschichte der Philosophie*, p. 851 in band viii. (1810). In England this phrase even became a legal maxim: as we may see in Wingate's *Maxims of Reason* (1658), no. 177. And it was judicially applied by Lord Chancellor Ellesmere [1] in 1610 and 1612. But it seems likely, that Ockham's most famous phrase in his own day was the: "Sufficiunt singularia, et ita tales *res universales* omnino frustra ponuntur": from which

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[1] Coke's *Reports:* I., 8, 167 (Earl of Cumberland's case): and I., 9, 95 (Sir G. Reynel's case). See also Coke's *Institutes*, Part I. (on Littleton) for the application of this maxim to feudal tenure.

he probably became known as the Singular Doctor. It must not, however, be supposed that Albertus Magnus was called the Universal Doctor, for a similar though opposite reason. He, like Aristotle and Francis Bacon, "took all knowledge to be his province".

3. Ueberweg indeed, whose *History of Philosophy* was first published in 1863 (ten years after the revised edition of Hamilton's *Discussions* in 1853), said in § 16 of his second volume (§ 104 of the English translation by Morris and Porter): "William of Occam founds his rejection of Realism on the principle; *Entia non sunt multiplicanda præter necessitatem.* He combats the realising and hypostatising of abstractions (*Sufficiunt Singularia, etc.*)": p. 462 in the first volume of the English translation by Morris (1872), and § 36 on page 307 of theil ii., in the new German edition of 1898. No reference is given; and Ueberweg cannot always be trusted, even when he does give a reference. On the previous page (461) of § 104, he refers to the Scotist Petrus Aureolus († 1322, Archbishop of Aix): *In SS.*, ii., D. 12, Q. 1, for an assertion that: "He (P. A.) enounced the principle subsequently known as the Law of Parcimony: *Non est Philosophicum, pluralitatem rerum ponere sine causa; frustra enim fit per plura, quod fieri potest per pauciora*". But there are no such clauses in the *locus* indicated; and the Index gives no clue to their presence anywhere else. It is indeed possible that he has written them somewhere; because the words had previously been used by his master Duns Scotus: a fact, with which Ueberweg does not seem to have been acquainted. Aureolus actually says (*In SS.*, i., D. 3, on p. 164 of vol. i.), referring to Aristotle's *Physica* (i.): "In principiis debet tanta paucitas, quanta sufficit ad salvandum ea, quæ sunt in natura necessaria".

4. My Note of April, 1915, asking for references to Ockham from readers of Mind, had the same fate as Prof. W. R. Sorley's inquiry in July, 1904 (p. 456), for the source of T. H. Green's fictitious quotation from Kant[1] (so long beloved of Oxford examiners): "Macht zwar der Verstand die Natur, aber er schafft sie nicht". There was no response; and, I venture to think, for the same reason. The earliest use of the popular phrase, which I had then lighted upon, occurs in an Inaugural Dissertation by Leibnitz in 1670: *De Stylo Philosophico Marii Nizolii*, § 28 (De Secta Nominalium). He does not, however, profess to quote, but says in *oratio obliqua*: "Generalis autem Regula est, qua Nominales passim utuntur, Entia non esse multiplicanda præter necessitatem". The words do not appear in the only philosophical work of Mario Nizzoli: *De veris principiis et vera ratione philosophandi*: published at Parma in 1553. Another edition was published at Frankfurt in 1674, under the new title *Anti-barbarus Philosophicus*;

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[1] "The Understanding makes Nature, but does not create" (the material out of which it is made). See T. H. Green, *Prolegomena to Ethics*, § 11, first published in Mind of January, 1882, p. 9. It occurs also in his *Lectures on Kant*: *Works*, vol. ii., p. 86 (§ 74).

with the Dissertation by Leibnitz prefixed as an Introduction. In Hurter's *Nomenclator* (iii., 8), Nizolius is described as: "Philosophiæ scholasticæ acer adversarius, Occami Nominalismi assecla". But he is better known through the many editions of his Ciceronian Concordance (*Thesaurus Ciceronis*).

5. I have since found in Clauberg's *Elementa Philosophiæ seu Ontosophia* (Groningen, 1647), part ii., § 169, p. 74: "Entia non sunt temere (sine necessitate) multiplicanda". And again on page 174 (part iii., § 121): in both cases without quotation-marks, or any reference to Nominalism, to Ockham, or to any source whatever. Possibly he regarded the phrase as a proverb, needing no sponsor. But I cannot find any such proverb in those vast collections of mediæval and earlier phrases: the *Adagia* of Erasmus, and the *Polyanthes* of Mirabellius. The common formula is exactly given in Clauberg's *Logica Vetus et Nova* (1654), page 320, under Definition; but not as a quotation, nor with any reference.

6. De Wulf in § 335 accuses Duns Scotus of: "creating fictitious, misleading, and superfluous beaconlights,—in defiance of a precept which he himself pretended to approve of: *entia non sunt multiplicanda præter necessitatem*". But he gives no reference, and I cannot find the formula anywhere in the text of the Subtle Doctor's writings. It appears substantially indeed in Wadding's edition (1639), tom. vii., p. 723 (27): but only in a new Franciscan Commentary on the *Opus Oxon.*, iii., D. 34, Q. 1, Scholium 4. Wadding's chief collaborator, John Ponce of Cork, there mentions: "illud axioma vulgare, quo tam frequenter utuntur Scholastici; *non sunt multiplicanda entia sine necessitate*". He does not, however, name any of these *Scholastici;* and I can merely affirm (with almost mathematical certainty) that they do not include Ockham, Scotus, or Aquinas; and that the axiom does not occur in the two most popular textbooks of the Middle Ages, the *Sentences* of Peter Lombard (Bishop of Paris, † 1164), and the *Summulæ Logicales* of Petrus Hispanus († 1277, as Pope John XXI.). I may add, with sufficient moral certainty, Abelard, Hales, Albert, Bonaventura, and Durand. Ockham's disciples, Gabriel Biel of Tübingen († 1495), and John Major of Haddington and St. Andrews († 1540), each of whom has been called, "The Last of the Schoolmen," are satisfied with their Master's *Pluralitas* or *Frustra fit.*[1] Reference may be made for the German, to his *In Sententias*, iii., D. 3, Q. 2, N. 4 (*Conclusio* 1), or (for applications) to i., D. 26, Q. 1, A. 1 (*Conclusio* 3). And for the Scot, to his *Logica* (1516), *Tractatus Primus Summularum*, folio 28, col. 4.

7. On the other hand, De Wulf might have said with perfect accuracy, that Scotus, no less than Ockham, accepts and systematically applies the Law of Parcimony; whose origin he ascribes to Aristotle's *Physica* and *De Anima*, especially the first Book of

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[1] Further, we may note, that there is no mention of the common formula (or any other) in the *Philosophia Nominalium Vindicata* of Jean Salabert, published at Paris so late as 1651.

the former (cc. 5 and 7). Two (if not more) equivalent phrases are common to Ockham and Scotus: *Pluralitas, etc.*, and *Frustra fit, etc.*

(*a*) "Nunquam est ponenda pluralitas sine necessitate," appears in the Scotian Commentary *In Metaphysica* (Aristotelis): i., Q. 4, Scholium 3, p. 532 (10) of Wadding's tom. iv.

(*b*) "Pluralitas non est ponenda, nisi ubi est necessitas": *Opus Oxon.*, i., D. 3, Q. 6, Scholium 5, p. 525 (12) of tom. v.

(*c*) "Ista opinio ponit pluralitatem sine necessitate, quod est contra doctrinam Philosophorum": *Opus Oxon.*, iv., D. 1, QQ. 4 and 5, Scholium 3, p. 84 (7) of tom. viii.

(*d*) And in the next Scholium (4) he declares: "Sicut sequenti rationem naturalem, non sunt ponenda plura, nisi quæ ratio naturalis concludit, ita sequenti fidem non sunt ponenda plura quam veritas fidei requirat": p. 90 (9) of tom. viii.

(*e*) A peculiar variant occurs on page 737 (4) of tom. iv.: *In Metaphysica*, viii., Q. 1, Scholium 2: "Positio plurium semper debet dicere necessitatem manifestam".

(*f*) "Frustra fit per plura, quod potest fieri per pauciora:" is found on page 30 (3) of tom. ii.: *In Physica* (Aristotelis), i., Q. 8.

(*g*) This is expanded into: "Generale enim principium est, quod si aliquid potest aeque bene fieri per pauciora, sicut per plura, nullo modo talis pluralitas debet poni": *De Rerum Principio*, Q. 1, art. 2, Scholium on page 92 (9) of tom. iii.

(*h*) Another peculiar Scotian variant is given in the *Reportata Parisiensia*, ii., D. 15, Q. 1, Scholium 5, on page 348 of tom. xi.: "Paucitas est ponenda, ubi pluralitas non est necessaria".

8. The Metaphysical (or Methodological) Law of Parcimony (or Logical Frugality), indicated but not very distinctly expressed by Aristotle,[1] was fully and finally established, not by Ockham († 1347), but by his teacher Duns Scotus († 1308): the greatest mind of the later Middle Ages, so unhappily cut off when he was only beginning to pass from the critical to the constructive stage. According to some biographers he died at thirty-four. Though unintelligently described by Leibnitz and others as an Extreme Realist, his Universal was only an *Ens Rationis*; a Brain-tool having a merely metaphorical entity. "Ens (Reale seu Naturale) est concretum," he said in his *Tractatus de Modis Significandis*, i., c. 25 (12): page 58b in tom. i. "Ens est duplex, naturæ et rationis. . . . Ens Rationis . . . cujusmodi sunt Genus, Species, Definitio:" in his *In Elenchorum LL.*, Q. 1, page 224 (2) in tom. i. "Est enim Species tenuis similitudo Singularium": in his *Super Universalia Porphyrii*, Q. 4, page 90 (4) in tom. i. The "Formalism" of the Most Subtle Doctor looks like the tentative and temporary device of a public teacher in Holy Orders; who did not wish to break openly with the dominant tradition of Realism; but was feeling his way to the "Terminism," boldly professed by his independent contemporary Bishop Durand of Meaux († 1332), and

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[1] See end of Appendix.

afterwards completely worked out by his pupil William of Ockham. It has lately been stigmatized by the modern semi-Scotist, Professor Pohle of Breslau, as: "an inconceivable hybrid, which excludes every attempt of the mind to grasp it": p. 153 of *The Essence and Attributes of God:* vol. i. of his *Dogmatic Theology,* translated by Arthur Preuss. Both the Oxford Franciscans (Ockham and Scotus) used indifferently the two formulas: "Pluralitas non est ponenda sine necessitate": and, "Frustra fit per plura, quod potest fieri per pauciora"; while a formula very similar to the latter was used by the Most Resolute Doctor, the great Dominican Nominalist Durand: "Frustra autem ponuntur plura, ubi unum sufficit": *In Sententias,* ii., D. 3, Q. 5, N. 4. Occam's main contribution to the Doctrine was a special application to the Logic of Universals, in his characteristic formula: "Sufficiunt Singularia, et ita tales *res universales* omnino frustra ponuntur": *In SS.,* i., D. 2, Q. 4 (top of col. 18). Few or no competent critics will question Mansel's judgment of Ockham, on page 40 of his Introduction to the *Rudimenta* of Aldrich: "The ablest writer on Logic whom the Schools have produced. . . . The *Summa Totius Logicæ* of Occam is the most valuable contribution of the Middle Ages to the *Logica Docens.* His editor, Mark of Beneventum, said that, if the Gods used Logic, it would be the Logic of Occam."

9. The doctrine was first completely applied to Physics by Sir Isaac Newton in 1713. He quotes the very words of Scotus and Ockham in the brief annotation of his first *Regula Philosophandi:* [1] which is itself a very similar statement of the principle. In the Third Edition (1726) of the *Principia Mathematica* (De Mundi Systemate, lib. iii., p. 387, the Rule runs: "Causas rerum naturalium non plures admitti debere, quam quæ et veræ sint et earum phenomenis explicandis sufficiant". Newton then subjoins: "Dicunt utique philosophi: Natura nihil agit frustra, et frustra fit per plura quod fieri potest per pauciora": a comment not found in the First Edition (1687). There is, however, no mention of Ockham or Nominalism in the *Principia.* The term *Novaculum Nominalium* was quite unknown in the seventeenth century. It came into vogue in the middle of the eighteenth century, as the international learned translation of Condillac's flash of Gallic wit: *Rasoir des Nominaux,* in a note on page 214 of his *Origine des Connaissances Humaines* (1746): Section V. (Des Abstractions), chap. i., § 5. The English variant (Occam's Razor) is a century younger; having made its first appearance in

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[1] *Regula* I. (in the Third and last of the author's editions), corresponds with *Hypoth.* I. on p. 402 of the First Edition (1687). The change of name from *Hypothesis* to *Regula,* and the words "Dicunt etc.," prefixed to the original comment: "Natura enim simplex est et rerum causis superfluis non luxuriat": first appeared on p. 357 of the Second Edition (1713). In the First, the paging leaps from 383 to 400: 386 thus becoming 402.

Sir William Hamilton's *Discussions* (1852), page 590 (On Causality). In the second edition (1853) it is used on pages 616 and 629. In the latter place it is for the first time distinctly associated with the current form.

10. The following Conclusions I call Provisional, mainly because there is still a possibility that they may be upset by German investigators of Ockham's unpublished manuscripts. These have lain idle for nearly six centuries at Ingolstadt or Munich; still uncopied, and probably unread, by any Englishman; much to the discredit of Merton College and the University of Oxford. Many of his cardinal works have never been printed: including his Commentaries on the Second, Third, and Fourth Books of the Lombard Sentences. The Commentary on the First Book (printed in 1495) is very full; but the appended comments on the other Books are only slender bundles of selected Questions, occupying together only one-third of the volume.

PROVISIONAL CONCLUSIONS.

A. "Occam's Razor" is a modern myth. There is nothing mediæval in it, except the general sense of the post-mediæval formula: *Entia non sunt multiplicanda præter necessitatem.* This myth has come to full maturity and secured general assent, within the lifetime of many philosophers of the present day; though it is a matter of purely intellectual interest, without any impulse or reinforcement from commercial greed, family-pride, national vanity, sectarian zeal, or political party-spirit.

B. The age of the English title is not yet threescore years and ten: dating from the publication of Sir William Hamilton's *Discussions* (1852).

C. The Latin title, *Novaculum Nominalium*, is little (if at all) more than a century older: being a translation of the French title, *Rasoir des Nominaux*, bestowed upon the current formula by Condillac in 1746.

D. (1) The current formula was unknown to Ockham and the other Schoolmen.

(2) It was invented in 1639, substantially in its present wording, by the Scotist Commentator, John Ponce of Cork: a little-known man of great abilities and very independent disposition.

(3) It first appeared in its present exact order of words, in the *Logica Vetus et Nova* of John Clauberg of Groningen in 1654.

(4) It was first formally associated with Nominalism by Leibnitz in 1670; and this connexion seems to have been generally accepted from the beginning of the eighteenth century. The reason of the connexion was indicated in 1676, by Jakob Thomasius (father of the celebrated jurisprudent Christian T.), in his Oration *De Doctoribus Scholasticis Latinis* to the University of Leipzig: "Hoc principium: Non esse absque necessitate multiplicanda entia. Hinc enim ipsi (Nominales) Realibus ut prodigis

rerum multiplicioribus invidiam fecerunt, suam vero philosophiam frugalitatis nomine extulerunt. Reales vicissim qui principium illud, mirum entium avaritiam quam tamen natura non amet, in Scholas importasse, simulque; multas interemisse veritates dictitarent, Nominalibus avaritiam probri loco objecerunt." It is possible that Leibnitz, who was only twenty-four in 1670, may have got the notion of connecting Parcimony (or Logical Frugality) with Nominalism, from some earlier expression of opinion by the elder Thomasius.[1] Some of the very words of Thomasius appear in Morhof's *Polyhistor* (1688), *Tom.* II. (1), c. 13, p. 75: which is followed in Brucker's *History of Philosophy* (1766), *Tom.* III., p. 904, § 27.

(5) Still, even then, nobody connected Ockham in particular, with the newly-accepted Scotist-Nominal formula. That connexion may be dated apparently from 1812; when Tennemann in his *Grundriss der Geschichte der Philosophie* (§ 271), wrote of Ockham as following the Rule: Entia non sunt multiplicanda præter necessitatem: without expressly ascribing to him the actual use of the very words. They had not been mentioned in his previous larger History (1810), which had quoted "Frustra fit" in a note on page 851 of band viii. Tennemann's loose anachronistic use of the post-mediæval formula seems to have misled Ueberweg; and had previously caused misunderstanding in Britain. His Manual had been translated in 1832 by Rev. Arthur Johnson, from the posthumous edition of 1829 as revised by Wendt. Hamilton never noticed the anachronism, though he reviewed Johnson's translation very severely in the *Edinburgh Review* of October, 1832. He indeed tacitly adopted it in 1853, after inventing the label *Occam's Razor.* That label was at first (in 1852) applied by him to the Law of Parcimony in general. Hamilton, moreover, seems to have previously devised that very title, Parcimony, in place of the older Frugality. So far as I can find, it first appeared in his edition of Reid's *Works* (1846), in a note to Reid's First *Essay on the Intellectual Powers* (chap. iii., p. 236), and in his Supplementary Note A, § 2, p. 751.

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[1] Thomasius says obscurely of "Entia non etc." (*loc. cit.*): "Quod a Ferrariensibus discimus, frequentissime Nominales usurpasse". But I cannot find any mention of collaborate Ferrarienses (like the Salmanticenses and Conimbricenses) in any work of reference. Brucker (*Hist. Phil.*, III., 866) classifies Hieronymus Fantonus (or Fontanus) de Ferrariis O.P. († 1532) as a *Nominalis*, but this Grand Inquisitor's *Repertorium Scoti* (or *Loci Communes*) contains no allusion to the Law of Parcimony in any form. Franciscus Sylvester Ferrariensis O P. († 1526) cites "Frustra fit etc." (in substance), and ascribes its origin to Aristotle, in his Questions on the *Physica*: I., Q. 9, p. 35*b*. He says there: "Quod potest fieri per pauciora, superfluum est, si fiat per plura": and (a few lines lower), "Natura non agit per plura, quod fieri per pauciora potest". The latter seems to be borrowed from Averroes: *Comment. de Physico Auditu* (Aristotelis), N. 50, on p. 31*b* of the Latin translation by Jacob Mantinus (Venice, 1574). See also NN. 40 (27*c*) and 41 (26*a*).

The unfortunate carelessness of Tennemann and Hamilton has engendered a very serious philosophic corruption. For, it has turned a sound rule of Methodology into a Metaphysical dogma. As J. S. Mill pointed out in his *Examination of Hamilton* (ch. 24, p. 542 in 4th edition): "The *Law of Parcimony* . . . is a purely logical precept". It is folly, to complicate research by multiplying the objects of inquiry; but we know too little of the ultimate constitution of the Universe, to assume that it cannot be far more complex than it seems, or than we have any actual reason to suppose. The value of this warning has just now received signal illustration from the very recent discovery of Chemical *Isotopes*; which has proved (*e.g.*), that what had previously been simply called "lead" is infinitely complex in its composition.[1] This discovery ought to operate as a salutary check upon dogmatism, and the tendency to turn logical rules into ontological principles.

APPENDIX.

Some readers of MIND, and other students of Philosophy, to whom the rare works of Ockham are not readily accessible, may be glad to have the following list of seventeen relevant quotations at hand for ready reference:—

A. "Pluralitas non est ponenda sine necessitate." (1) In *Sententias* (Petri Lombardi), lib. i., *Distinctio* i., QQ. 1 and 2. (2) *In SS.*, i., D. 7, Q. 2. (3) *Quodlibeta*, i., Q. 3. (4) Do., iii., Q. 2. (5) Do., iv., Q. 15. (6) Do., v., Q. 5 (lines 3 and 4).

B. "Non est ponenda pluralitas sine necessitate." *In SS.*, ii., Q. 15 (second column): Utrum Angelus superior intelligat per pauciores species quam inferior?

C. "Nunquam ponenda est pluralitas sine necessitate." *In SS.*, i., D. 27, Q. 2 (section K, not J as given by Prantl in his Note 758). The matter discussed is *Species Intelligibilis.*

D. "Talis species (intelligibilis) non est ponenda propter superfluitatem." *Expositio Aurea: Perierm., Proem.* See Prantl, N. 757.

E. "Si duæ res sufficiunt ad ejus veritatem, superfluum est ponere aliam (tertiam) rem": (1) *Quodlibeta*, iv., Q. 19; (Prantl, N. 768). (2) Do., iv., Q. 24; (Haureau, ii., 459).

F. "Sufficiunt singularia, et ita tales *res universales* omnino frustra ponuntur." *In SS.*, i., D. 2, Q. 4 (top of column 18).

G. "Frustra fit per plura, quod potest fieri per pauciora."

(1) *Summa Tot. Log., Pars.* i., cap. 12, f. 6, r. A.: referring to *Intentio prima and secunda.*

(2) *In SS.*, i., D. 31, Q. 1 (middle of first column): *Utrum Identitas, Similitudo, et Equalitas in divinis sint relationes reales?*

(3) *In SS.*, ii., Q. 15, sections O and Q: referring to *Species Intelligibilis.*

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[1] *Cf.* Prof. F. Soddy in *Nature*, Nos. 2490 and 2491 (1917, 12th and 19th June).

(4) *Philosophia Naturalis* (*Summulæ in Physicorum LL.*), *Quarta Pars*, cap. 1, p. 86b of the Roman edition (1637). In this he denies the reality of an Instant of Time; showing some anticipation of the (New Herakleitean) doctrines associated with the names of Bergson and William James. See also page 85a (at the top). Ockham's doctrine of the *Continuum* (in regard to Space), as it appears in his *Quodlibete*, I., Q. 9: Utrum linea componatur ex punctis: has been set out and discussed by Mr. Delisle Burns in MIND of October, 1916 (pp. 506 ff.)

(5) *De Sacramento Altaris*, Q. 3 (Utrum corpus quod est quantitas sit res absoluta, distincta realiter a substantia), page 41 of the Paris (Blackletter) edition of 1513. I am indebted for this last reference to Mr. C. Delisle Burns, in MIND, October, 1915. Mr. Burns has shown the philosophical incongruity, and consequent improbability of the commonly assumed use of "*Entia, etc.*," by Ockham. See also page 45. And compare with Scotus on the same subject (Quantity): *In Physica*, i., Q. 8: tom. ii., p. 30 (3). Refer to § 7 (f.) *supra*. Aristotle's nearest approximations to the doctrine developed by Scotus will be found in cc. 4, 6, and 7 of the First Book of the *Physica*. "Beltion de elattō kai peperasmena labein, hoper poiei Empedoklēs: (Praestat autem pauciora et finita principia sumere: quod quidem facit Empedocles)": *cap.* 4, p. 188*a*, lines 17-18 (Bekker). See also c. 6; p. 189*a*, lines 12-13, 20, 26-27; and p. 189*b*, lines 18-19. Likewise c. 7; p. 190*b*, lines 35-36; and p. 191*a*, lines 6-7.

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VI.—CRITICAL NOTICES.

Locke's Theory of Knowledge and its Historical Relations. By JAMES GIBSON. Cambridge University Press, 1917. Pp. xiv, 338.

FEW philosophers have been more unfortunate in their expositors and critics than Locke. A convinced rationalist in his insistence upon the reality of "synthetic and *a priori*" knowledge, he had the ill-luck first to be mistaken by the later empiricists for one of themselves, and then on the strength of this mere blunder to be denounced and caricatured by "idealists" whose conceptions of science were at bottom very much the same as his own. Prof. Gibson has rendered a very timely service to the cause of sound historical criticism by the masterly way in which he has set Locke's own conception of the problem "how synthetic universal *a priori* propositions are possible," and his solution of it before the reader, freed from all the misunderstandings created by the assumption that Locke was merely an earlier and less consistent Berkeley or Hume. Henceforth no English student of thought will have any excuse if he re-echoes Kant's perverse dictum that Locke's *Essay* is a mere "physiology of the human mind," or, like Green, mistakes the first English critical philosopher for a sensationalist. In the execution of his task of exposition, Prof. Gibson exhibits the greatest felicity. He is always thorough, always lucid, and almost always convincing. He has given us a real addition to the stock of historical studies of eminent philosophers which may fairly be called classics, a volume worthy to rank with Sir Frederick Pollock's *Spinoza* and M. Couturat's *Logique de Leibniz.* If it were ever possible to "say the last word" about anything, one might almost maintain that Prof. Gibson has said the last word about Locke's objects in writing the *Essay.* The result is in every way to intensify one's conviction of the fundamental greatness of Locke, and his right to take a place beside Descartes and Kant among the real openers of new paths in philosophical thought. The true Locke is a very much bigger man than the fictitious Locke of the empiricists, whose main merit was to have struck a swashing blow at the believers in innate principles, or the equally fictitious Locke of Kant and Green who fancied that he had demolished rational science by an irrelevant "theory of the origin of our ideas".

Prof. Gibson would probably admit that on the whole the critical interpretation of Locke's doctrine is the more important of the two related subjects with which he has set himself to deal. But correct interpretation, of course, involves a sound understanding of the relations of Locke to other thinkers, and especially to those whom he found it necessary to criticise at length. Prof. Gibson's chapters on the historical relations of Locke's thought to earlier and contemporary doctrines, especially his luminous handling of the question who the defenders of "innate principles" dealt with in Book I. of the *Essay* were, seem to me almost as good as his directly expository work. They would probably have been quite as good, but for two reasons (1) he has precluded himself from tracing the history of some of the positions Locke impugns back to their real origin by limiting his treatment to what is called "modern" philosophy, and (2) in everything which has to do with Leibniz and his penetrating discussions of Locke's system, Prof. Gibson seems to suffer from "imperfect sympathy". The very excellence of Prof. Gibson's book makes it unnecessary to enter upon a lengthy exhibition of its merits in detail, and the writer of this review is further precluded from taking such a course by his almost unqualified concurrence with most of Prof. Gibson's judgments. The remarks that follow are intended only to call attention to a few points of secondary but real importance where, perhaps owing to the reviewer's incapacity or misunderstanding of Prof. Gibson's meaning, the concurrence is not quite absolute.

It is perhaps a pity that the admirable opening chapter in which the main issue of the *Essay* is explained should be confused by the unnecessary introduction of the later distinction between "idea as meaning" and "idea as process". Prof. Gibson is, of course, well aware that Locke never expresses himself in terms of this "double-aspect" doctrine of "ideas," and particularly that the now popular description of the "meaning" as the "content" of the "process" does not really answer to anything in Locke's terminology. Of course, if you are trying to restate Locke's doctrine in a terminology of this kind, you will have to say, as Prof. Gibson does, that Locke's interest in "ideas" is concerned with the "content," whereas the empirical psychologist is interested in the "process". In a way this does express Prof. Gibson's point that Locke is concerned not with psychology but with critical philosophy in the Kantian sense. But I doubt very much whether the precise truth about Locke's "way of ideas" can be expressed at all in terms of the two-aspect theory, and also whether the two-aspect theory itself has really any meaning. Is there any sense in talking of the objects which we perceive or think of as the "contents" of mental "processes"? In the case of sense-data the difficulty is specially obvious, for there it looks as though the "process" might be purely nervous. Are we then to say that the colours we see, for example, are "contents" of the physiological process of colour-vision? Does it not rather seem manifest that though blue or red is an object perceived in virtue of a complicated physiological process, neither blue nor red is, in any intelligible sense of the word, "contained" in the process? The same question arises if we think of a process of thought. When I think of Julius Caesar, or of the base of the system of natural logarithms, is there any sense in which Julius or e can be said to be contained in the process of thinking about them? If you say there is such a sense, you may fairly be challenged to explain it more fully, and you lay yourself open in addition to a further difficulty. If the things about which I think are "aspects" of the process of thinking, it should follow that the "process" should itself be different where the correlated aspect of "content" is different. *E.g.* e is an object of a very different type from Julius Caesar, and on the "process-content" theory, it ought to follow that the *act* of thinking of e, as a mental act, likewise differs from the *act* of thinking of Julius. But it seems very doubtful whether this doctrine is true, and by no means certain that Locke would have admitted it to be true. Locke's position is, I think, much better stated without the complications introduced by the "process-content" theory. His distinction is primarily the simple one between the act and the object it cognises. He sometimes speaks, as we all do, of the knowledge we have of objects as the "contents" of our mind, but never of an object as the content of a mental process. Indeed, to myself his use of language rather suggests the view that he looked on the "activities" which the mind exercises "about" its "ideas" as unaffected by differences among the "ideas". Thus he probably held that *e.g.* comparison is a simple activity, *unum et idem numero*, no matter of what very different types the "ideas" compared may be. If so, he may also have held implicitly that the mental act of simple apprehension is also unaffected by the fact that *what* we apprehend is sometimes a colour, sometimes a sound, sometimes a smell. This position, which seems to me quite consistent with fidelity to Locke's principles, is quite incompatible with the "two-aspect" theory. Hence I think it a pity that Prof. Gibson writes as if a follower of Locke must necessarily hold the double-aspect doctrine. A consistent follower must, of course, hold a theory of representative perception, but that, as it seems to me, is another matter. I am not sure whether Prof. Gibson believes in representative perception. There is a passage on page 13 which tends, so far as it goes, to show that he does, but unfortunately representative perception is a matter that he has not seen fit to discuss very fully. To my own mind neither he nor Locke offers any serious proof of the doctrine. Both assume that the immediate and direct objects apprehended by the mind must themselves be mental. There seems no more reason for thinking this than there would be for saying that our eyes can only see other eyes or our feet only kick other feet. And neither Locke nor his expositor seems to have reflected seriously enough on the question in what sense the "immediate objects of the mind" can be called "mental". So far as I can see there is only one sense in which it can be maintained that all immediate objects of "thinking" are "mental," *viz.*, in the sense that they *are* objects about which the mind thinks. That they are mental in any further sense seems to me an unproved, and indeed false, assertion. Until some one can *prove* that it is impossible for a mind to stand in the cognitive relation to a non-mental object, I see no ground to believe in "the mediating function" of "ideas," and I am sure that the belief has been productive of endless confusion and fallacy. In Prof. Gibson's discussion the extreme difficulty of the position is, I think, concealed by the ambiguity of the word "function" which he employs very freely. I do not think he is quite clear whether he means to use the word in a biological or in a mathematical sense, though it is highly important to be clear on this point. Thus *e.g.* the act of judging (of asserting the truth of a proposition) is, in the biological sense a function of the mind which makes the assertion, but the proposition asserted is in the quite different mathematical sense a function not of anyone's mind but of the thing or things about which the assertion is made. Confusion on this point seems to play a great part in predisposing the unreflective in favour of the doctrine of representative perception.

Prof. Gibson has made a valuable contribution to historical knowledge in his proof that the arguments of Book I. of Locke's *Essay* are directed against the appeal made by contemporary "Platonists" to our possession of alleged "common" or "innate" principles. I wish his self-imposed restrictions had not prevented his following this belief up to its origin in Stoic perversions of Platonic doctrine. The origin of the whole doctrine is manifestly the famous account of scientific method in the *Phaedo.* We are told there that the true method of science is to start with what seems the most satisfactory hypothesis, or set of postulates, and work out its consequences with logical thoroughness. It is, of course, implied that if these consequences prove to be at variance with the "appearances" the hypothesis proposes to account for, the hypothesis is discredited. No suggestion is made—and it is just here that Plato shows greater insight than his successors—that the "hypothesis" or its parts should be "self-evident". In fact, it is implied that this will not usually be the case, for Socrates goes on to speak of the possibility that one's "hypothesis" may be disputed, and the necessity which then arises of convincing the opponent by showing that your "hypothesis" follows from principles which he himself admits. In the *Phaedo* the famous Theory of Forms is put forward simply as the (unproved) "hypothesis" which Socrates regards as adequate to explain the problems about predication, if we are willing to postulate it. It is, of course, from the half-mythical language of the *Phaedo* that the presuppositions of science get the name of "innate ideas". The equivalent "*common* principles" is a Stoic phrase. Aristotle unfortunately depraved Plato's logic by the mistaken demand that scientific postulates should be self-evident, though in other respects his theory of the way in which "principles" become known "by induction" is substantially in accord with the *Phaedo* and *Meno.* But the Stoics, since their doctrine of knowledge was a thorough-going sensationalism, could not pitch upon the intrinsic self-evidence of universal principles as proof of their truth. From their point of view the truth of a universal belief depended on its being one that originates in the mind *spontaneously*, apart from the bias due to peculiarities of a special intellectual *milieu*. Hence the appeal to the *consensus gentium* as the strongest evidence for the truth of a "principle," and the introduction of the technical phrase κοινὰ ἐννοήματα or κοιναὶ ἔννοιαι, *notitiae communes*, as a name for the ultimate presuppositions of rational thinking. The equation "innate principles" = "common principles" indicates that the persons criticised by Locke took their vocabulary from Neo-Platonism, and thus confirms Prof. Gibson's identification of the persons meant.

Incidentally it might be remarked in justice to Locke's victims that they had the merit of recognising an important truth which his own halting and uncertain teaching about "ideas of relations" tends to obscure. They saw quite correctly that science of any kind presupposes "knowledge of acquaintance" not only of sense-data but of *universals*, types of relation and conjunction. That is they recognised the all-important point that in any sense in which we can speak of science as the mental elaboration of something "given" to the mind, the "given" includes elements of two radically distinct types, sense-data and elementary conjunctions which are universal, and might perhaps be called "thought-data". This has hardly been made sufficiently explicit enough in subsequent English philosophy until our own time, when it has been rightly insisted upon by Mr. Bertrand Russell. Locke overlooked the point, and did a great deal to confuse all later speculation by his unfortunate habit of speaking of the given as consisting wholly of particular sense-data and equally particular "ideas" of our own mental operations. Later empiricists, like William James, expressly commit the bad blunder in analysis of asserting that the conjunctions, which they rightly see must be part of what is "given," are sense-data, while Kant and his followers in this country oddly fancy themselves to have repaired Locke's omission by merely repeating his assertion (to which he never succeeded in being wholly faithful), that "relations" are somehow put "by the mind" into a given material which contains no relations.

Another matter in which Prof. Gibson has hardly reached finality is his account of figure and number, in which, as it seems to me, he is too easily satisfied with Locke's analysis, though he himself repeats the amusing story, which should have suggested serious doubts of Locke's mathematical competence, of the philosopher's having taken the first two books of Newton's *Principia* on trust because Huygens told him to do so. Like Locke, Prof. Gibson seems to think that the integers are actually collections of units and that geometrical figures are built up of "lengths". At least, his only comment on Locke's theory of figure is a vague remark that a figure "cannot be regarded as a result of a *mere* process of compounding lines or lengths". Apparently he does not see (1) that no integer is composed of units; (2) that Locke's doctrine leaves the existence of irrationals a hopeless mystery; (3) that Locke has left it an equal mystery that geometry treats of curves as well as of straight lines; (4) that *pure* geometry, being non-metrical, is not concerned with "lengths" at all. There is a similar lack of thoroughness about his treatment of Locke's account of the "idea of infinity". Apparently he does not see that Locke's account would actually make some of the most elementary mathematical truths doubtful. For example, if the infinity of the series of integers *only* means that we never actually reach in counting a number beyond which we can count no further, we have no right to say, "if x be an integer, x^2 is an integer". If you count the integers from 0 to x, however great x may be, many of the terms of the series $0^2, 1^2 \ldots x^2$ will fall *outside* the series $0, 1 \ldots x$. In fact, the greater x is, the *more* numerous will be the terms of the series of "squares" which fall outside the series $0, 1 \ldots x$, in comparison with those which fall within it. Hence the true proposition that the "square" of an integer is always an integer can only be known to be true if the number of integers is actually infinite. If we only knew that we had never yet counted all the integers, the proposition would be doubtful, and it might even be urged that induction by simple enumeration shows it to be probably false. There are other passages dealing with Locke's mathematical theories which seem to me equally lacking in thoroughness. Thus the remarks on page 152 about the method of "ideal superposition as employed in the geometry of Euclid" could hardly have been made if Prof. Gibson had remembered (1) that the method is so far from being characteristic of Euclid that, as Mr. Russell has remarked, Euclid always does everything he can to avoid its use; and (2) that there is really no such thing as "ideal" superposition. The points, lines, etc., of the mathematician cannot be moved about, and actual physical superposition always introduces modifications of the facts. Again, it is hard to attach any definite mathematical sense to the statements made by the author in various parts of the volume about "continuity" and "discreteness," though in this matter at any rate Prof. Gibson does not stand by any means alone among our logicians.

There are a few points in the account of Locke's attitude towards scholastic Aristotelianism where I find it a little hard to follow Prof. Gibson. I do not see that he has anywhere shown that there are any "contradictions" involved in Locke's view (see page 193) that reality is constituted by a plurality of substances, and that our minds are among them. Indeed, if we bear in mind that in scholastic terminology "substance" means whatever can appear in a predication only as subject, never as predicate, Locke seems to me plainly right. I would suggest to Prof. Gibson that there is much to be learned on this point from the careful discussion in Prof. Laird's recent *Problems of the Self.* Who told Prof. Gibson that the scholastics thought that reality is "exhaustively comprehended under the categories of substance and quality," and that it was only at some recent undefined date that philosophers discovered the category of relation I am curious to know. Such doctrines are curiously non-Aristotelian, and I have not found them in my own imperfect reading of the great schoolmen. *Individual* substances, since they can never be predicated of anything, are of course not included in the scheme of the "figures of predication" at all, and "relation," as I am sure Prof. Gibson knows, was in the list from the first.

In the discussion of Descartes and his influence on Locke, an interesting historical point escapes notice. As I have never seen the matter made quite clear by any writer on Cartesianism I may be allowed to refer to it here. What did Descartes really mean by the "natural light" to which he often refers as making certain propositions clear? If one examines the particular truths of which Descartes speaks as known by this "natural light," I think it will be discovered that its real significance is that Descartes relies on it for the peculiar doctrine of causality which pervades the *Meditations* and is the real basis of his argument for the existence of God. In point of fact this theory of causality is Neo-Platonist, and its precise formulation comes from the *Institutio Theologica* of Proclus. Descartes pretty certainly got it from St. Thomas, and he in his turn from the so-called *Liber de Causis*, really a fragment of Proclus, but taken in the Middle Ages for a work of Aristotle, and from the works of "Dionysius". That Descartes in his attempt to re-found philosophy should have assumed Proclus' doctrine of causation as axiomatic is as interesting an example as I know of the artificiality of the whole distinction between "ancient" and "modern" philosophical thought. In the treatment of Leibniz, I think Prof. Gibson seriously underrates the degree to which that philosopher's doctrines are determined by his logical theory. I suspect that he has not fully grasped the first-rate importance of some of the evidence on this point contained in the volume of essays and fragments of Leibniz published by M. Couturat. To my own mind the essays entitled by M. Couturat, *Analysis Veritatum* and *Primae Veritates* leave no room at all for controversy.

I am sure that the few remarks I have thought it proper to make on special points will not be understood to affect in any way my high appreciation of an admirable book. The printing, as is usual with the Cambridge Press, is excellent. I note, however, one unfortunate oversight on page 247 where Cudworth is made to speak of "Democratic and Epicurean Atheists". Of course what Cudworth wrote was "Democritic".

A. E. TAYLOR.

Studies in Psychology. Contributed by Colleagues and Former Students of Edward Bradford Titchener. Worcester, Mass., L. N. Wilson, 1917. Pp. 337.

THIS volume, edited by Profs. W. B. Pillsbury, J. W. Baird, and Margaret Floy Washburn, contains eighteen essays and articles contributed in commemoration of the completion by Prof. Titchener of twenty-five years' work in psychology at Cornell University. It is a tribute well-deserved and worthy, "to a man . . . to whom," as the dedication puts it, "the facts and laws of mind are . . . the most real things that the world can show". Experimental psychology owes a great debt to Prof. Titchener, not only for his own distinguished contributions to the advance of scientific knowledge, but, as the present book makes clear, for the large number of accomplished investigators whose interest in psychological problems has been stimulated and directed by his efforts.

The Studies fall roughly into two groups, according as they are (*a*) general, or (*b*) more or less strictly experimental, while Prof. Pillsbury's essay on *Principles of Explanation in Psychology* may be regarded as, in a way, introductory to the study of either group.

Pillsbury remarks that now, as never before in the history of psychology, diverse principles of explanation claim attention. To one group of investigators all explanation is to be expressed finally in physiological, to another in biological, to another in psycho-physical, and to another in purely psychical terminology. Selecting the problem of the antecedents of action as an illustration, Pillsbury, with excellent clarity, describes the present situation. There is widespread agreement with regard to what *are* the antecedents, and at the same time emphatic disagreement concerning what they *do*, and which are to be taken as possessing ultimate significance. At the one extreme is Thorndike, with his claim that the purely psychical element no more affects action than does "the melting of a wax image affect the health of the man imaged". At the other are writers like MacDougall, Michotte and Ach who assert a purely psychical determinant of action. Pillsbury, after all, does little more than call upon everybody to carry on as usual. The apparent conflict may turn out to be less real than at first appears. We must collect, classify, describe and analyse mental events, and here observation and experiment play their parts. "Structures and functions may be treated by introspection and objective experiment, and the results," says he, in a somewhat pious imperative, "must be valuable whatever the final systems into which they are organised." Wider interpretation will inevitably then be attempted, for it springs from a deep-rooted "instinct for unification". And although this attempt cannot fail to provoke disagreement, even such a result is to be preferred to stagnation.

The contentions of the essay are undoubtedly confirmed by the character of the book. Collections, descriptions, and analysis of facts are presented with the greatest of confidence, but throughout the whole volume very few interpretations are put forward, especially by the experimentalists, in anything but a tentative manner, and there is a much-repeated demand for further research.

Not all of the experimental studies are equally carefully conducted. At the one extreme is a most careful investigation by C. E. Ferree and Gertrude Rand, of *The Selectiveness of the Achromatic Response of the Eye to Wave-Length, and its Change with Change of Intensity of Light*, and at the other are two studies of the well-known reaction type, by R. M. Ogden and H. P. Weld, entitled respectively *Some Experiments on the Consciousness of Meaning*, and *Meaning and Process as Distinguished by the Reaction Method.* The passage from the first to the second extreme reveals a progressively decreasing emphasis upon technique, and a progressively increasing preoccupation with results. Ferree and Rand, as representing the strict experimentalist, conceive that nine-tenths of their duty lies in the exact definition of conditions. Far the greater part of their article is concerned with describing minutely the precautions they took to ensure the accuracy of their measurements, and the elimination of disturbing conditions. Consequently they find it unnecessary to enter upon an extended discussion of their results, which are simply set forth in a number of tables and diagrams. The results carry a relatively unambiguous significance, because the close attention to method has shown precisely what it is that they express.

A similar careful consideration of technique marks an able study of *Visual Rhythm*, by C. A. Ruckmich. The author's experiments were directed to securing and analysing rhythmical experience induced by visually presented stimuli differing in colour quality only. The method of experiment, which consisted in the exhibition, according to various determined sequences and patterns, of coloured lights having a constant subjectively equated intensity, was admirably arranged, and is described clearly. Here again, therefore, the precise significance of the results, so far as they go, is not doubtful, and the further research that is needed is rendered easily possible. Ruckmich shows that rhythmic experience expressed in purely visual terms may undoubtedly be secured, and maintains that although kinaesthesis, varying both in locus and in specific function, may play a part in this experience, it is never the really essential condition. "The essential part of the perception in every case consists of the visual sensations with their attributive changes, and their concomitant alteration of intervals." This statement remains somewhat indefinite, and the further study of "alterations of intervals" leads to problems of accent and grouping. The accent in visual rhythm may, Ruckmich says, be carried by any one of a number of factors, as by the quality, intensity, or spatial character of the sensation or percept. Grouping is vaguely described as "a complex of perceptions organised in terms of imaginal and kinaesthetic processes on a basis of affectively toned organic experience". Further experiments are needed, but Ruckmich is to be congratulated on having made good his problem, and having devised an admirable method of experiment.

With this work it is interesting to compare L. R. Geissler's study of *The Affective Tone of Colour Combination.* The object of his experiment was to determine the affective value of two-colour combinations, and their relation to preferred single colours. A method of "paired comparison" was used throughout. Geissler employed a device which enabled him to test many subjects at a sitting, but it seems quite possible that this arrangement may have admitted of significant differences of illumination, both for different subjects at the same sitting, and upon the occasion of different sittings. Possibly also the form factor played a part in determining the judgments recorded. Geissler lays down a definite "law of summation of affections," which states that "the greater the pleasantness of the individual constituents the greater will be the pleasantness of the combinations". He discusses variations from the law, and also formulates certain general and specific sex differences in colour preference. The rather crude technique, however, makes it difficult to determine precisely the significance of the recorded judgments.

Prof. J. W. Baird's investigations concerning *Memory for Absolute Pitch* once again demonstrates the value of a simple and definite technique. His article, one of the best pieces of work in the whole volume, discusses such questions as: the nature and distribution of memory for absolute pitch; the efficiency of *timbre* in determining accuracy of identification; the ease of identification of notes chosen from the middle region of the tonal scale; and the nature of the errors of identification. Baird's tentative conclusion, that ability to determine absolute pitch may depend upon the recognition of a peculiar pitch quality, a c-ness, or d-ness belonging to every c or d, is somewhat dubious. At any rate the recorded results do not seem necessarily to lead to such an assumption. It may be that the factor of habitual experience plays a greater part than Baird will admit. Accuracy of identification may, as indeed Baird himself suggests, be simply a special case of recognition, depending upon an acquired ability to distinguish a difference of one pitch from all others. But it does not follow that the basis of the differentiation may be reduced to a specific pitch quality. It may be that the very varying amounts of success achieved by Baird's observers with different instruments indicates that we must look elsewhere for the real basis of identification.

Two others of the more strictly experimental studies may here be briefly noticed. A. S. Edwards, who investigated *The Distribution of Time in Learning Small Amounts of Material*, apparently shows conclusively that Meumann was wrong in affirming that "Jost's law does not seem to be valid for smaller and easier materials". He suggests, however, that the value of reviews in memorisation is directly proportional to the difficulty of the task.

Lucy D. and Edwin G. Boring, assisted by one other observer, carried out a heroic series of experiments in which they were wakened at unusual hours, and, having estimated the time, duly recorded the basis of their temporal judgments. The results are most admirably presented, and seem to show certainly that "the course of conditions within the individual organism during sleep is capable of giving rise to conscious temporal cues, adequate to the meaning of time within the limits of error set forth". Some of the cues are discussed, but so great a variety is indicated, even by three observers only, that, as the authors recognise, a more extensive investigation is demanded.

Neither Weld nor Ogden is much concerned with technique. The latter adopted the familiar method of presenting single words as stimuli, and calling upon his subjects to react when they had "fully grasped the meaning". Weld used series of unfamiliar words, "provided meanings" by the aid of pen and ink drawings, and when the words and the meanings had been adequately associated, instructed his observers, upon the presentation of a word, to react "either to meaning *or* to image". In both instances what constituted an experience of meaning was generally left undefined so far as the instructions to observers went, and Weld's work is at least valuable for its demonstrations that the occurrence of "types of meaning" may necessitate a variation of method in different instances.

In other respects Weld's work is less significant than Ogden's. The former uses much of his space in refuting T. V. Moore's objections to Titchener's context theory of meaning. The distinction between process-attitude, and meaning-attitude, however, which Weld regards as completely established, still remains of very doubtful validity.

In spite of obscurity of expression Ogden's study contains many suggestive points. Meaning, he maintains, possesses three distinct phases, or stages: its matrix, a nucleus out of which the words or contents related to form meaning emerge; its conscious appearance; and its expression, the latter often being marked by the occurrence of contents in imaginal or other form, "which, though unessential to the meaning, nevertheless define it and render it definite". Ogden is convinced, moreover, that the existence of a "notional order of elements" must be admitted. The notion is held to embody relations already established, and to do so without the reinstatement of "the contents upon which the relations were originally formed".

Concerning the constitution of "the vaguer essence of nuclear meaning," Ogden is extraordinarily indefinite. In it he finds evidence of *Bewusstseinslagen*, *Bewusstheiten*, various stages of awareness and of potential knowledge, and of *intentions* and *Wasbestimmtheiten*. In fact it is a kind of ghostly lumber house for all sorts of suspected elements.

These two articles go to show yet more clearly that the whole problem which they attack itself needs analysis, and that very little advance can be made by experiment until better technique is devised.

Even the most precise attention to method, however, will not protect an investigator from controversy. Rival methods may be put forward as having greater value. This is here illustrated in an article by Josephine N. Curtis on *Tactual Discrimination and Susceptibility to the Muller-Lyer Illusion, Tested by the Method of Single Stimulation.* The work was undertaken to test the justice of a part of Titchener's criticism of the procedure of the late Cambridge Anthropological Expedition to the Torres Straits. Titchener maintains that "all or none" tests applied widely yield more suggestive results than more extensive trials applied to but few subjects. Miss Curtis therefore applied a single trial of the two tests indicated by her title to large groups of "superior normal," "average normal," "feeble minded," and "insane or psychotic" individuals. The experimentation was of a somewhat rough and ready character, but it is claimed that the results tend to confirm Titchener's criticism. However, it does not appear that the two methods bear upon precisely the same points, and probably the judicious investigator, though obviously he will be largely determined by circumstances, will prefer to employ both methods, if he is able to do so.

Helen M. Clarke's *Note on Recognition* sums up the results of experiments already reported elsewhere, and contains nothing new. Prof. Sanford's brief contribution, entitled *A Letter to Dr. Titchener*, is very slight, and merely describes certain experiments on the effect of success upon subsequent performance of a task, on a test of the probability curve, and upon the *rôle* played in memorisation by "Intention-to-Remember-and-to-Reproduce".

Three of the remaining studies, each having a social bearing, are all general in character. In *The Social Psychology of Man and the Lower Animals*, Prof. Washburn maintains that the social psychology of man is distinguished from that of the lower animals mainly by the presence in man of "ejective consciousness," that is of "awareness of thoughts and feelings as belonging to other minds than our own". Social behaviour precedes ejective consciousness, so that certain questions concerning the development of the latter arise. Some of these Miss Washburn attempts briefly to answer. Her remarks are clear, and to the point. The main thesis, however, is simply assumed without discussion, and with but little attempt at definition.

Charles Gray Shaw writes on *The Content of Religion and Psychological Analysis.* He would appear to suggest that the psychologist of religion must first of all himself be religious, in order to be in a position to grasp the apparently contradictory forms in which religion expresses itself. The psychological bearing of the paper is, however, very small.

The third general study, by R. H. Gault, is entitled *The Sense* *of Social Unity—A Problem in Social Psychology.* Gault adopts an extreme individualistic position, deriving the sense of social unity from a man's imagery of the behaviour of his fellow-beings, his realisation of their purposes, ideals, and felt needs; and from his consequent emotional experiences. It is hard to see how such factors could be effectively operative apart from the prior existence of that very social sense which they are supposed to produce.

Three studies still remain. One is an extremely well-executed piece of introspection by Karl M. Dallenbach, on *The Psychology of Blindfold Chess;* in another H. C. Stevens describes clearly a proposed *Revision of the Rossolimo Tests;* and finally W. S. Foster presents *A Bibliography of the Published Writings of Edward Bradford Titchener.*

Containing, probably, no work of really first-class importance, this volume of studies is yet well worthy of careful perusal. In its way it is an excellent indication of the present state of experimental psychology, so far as laboratory work is concerned. Here are displayed the eager quest for facts; the search often, as it seems, directed by little beyond mere curiosity; the many investigators setting to work by the most diverse methods upon the most varied problems. It is impossible to avoid wondering at times whither all this largely uncorrelated activity is leading, and whether much of it is not waste of effort. Yet there is something to be said for Pillsbury's pleasure at the mere activity. And perhaps the old belief which his essay again expresses, is well founded: that somehow, as a result of this mass of varied effort, the complete book of the story of human experience will be written. Only it would seem to be an advantage if the collaborators would take pains to profit more fully from the fact of their collaboration.

F. C. Bartlett.

Proceedings of the Aristotelian Society. 1916-1917. Williams & Norgate. Pp. 497.

As the years go on the Proceedings of the Aristotelian Society grow fatter and fatter. This is not to be regretted, for they really form a valuable contribution to philosophic thought, and will be interesting to the historian by showing philosophic ideas in England in the making.

The present volume contains discussions of fifteen subjects, but two of these discussions are symposia to which several writers contributed. The contents may roughly be grouped as follows: (*a*) Two contributions to our knowledge of the physical world, *viz.*, the symposium on: *Are the Materials of Sense Affections of the Mind?* in which Messrs. Moore, Johnson (*mirabile dictu!*), Dawes Hicks, J. A. Smith, and James Ward took part; and Prof. Dawes Hicks's paper on *The Basis of Critical Realism.* (*b*) Three on epistemological questions, *viz.*, *The Problem of Recognition*, by Dr.

Wildon Carr; the *Organisation of Thought*, by Prof. Whitehead; and *Fact and Truth*, by Principal Lloyd Morgan. (*c*) Two on value-theory, *viz.*, *Valuation and Existence*, by Mr. Bartlett, and *Our Knowledge of Value*, by Mr. Pickard-Cambridge. (*d*) Two on general metaphysics, *viz.*, *The Conception of a Cosmos*, by Prof. Mackenzie, and *Relation and Coherence*, by Miss Stebbing. (*e*) Two on politics, *viz.*, *The Function of the State in promoting the Unity of Mankind*, by Prof. Bosanquet, and a symposium on *Ethical Principles of Social Reconstruction*, to which Messrs. Jacks, Shaw, Burns, and Miss Oakely contributed. (*f*) Lastly four on the history of philosophy, *viz.*, *Monism in the Light of Recent Developments in Philosophy*, by Mr. Joad; *The Notion of Knowledge as conceived by Malebranche*, by Mr. Ginsberg; *Some Aspects of the Philosophy of Plotinus*, by Dean Inge; and *Hume's Theory of the Credibility of Miracles*, by the present reviewer.

It is impossible to summarise, much less to criticise, such a large mass of material. I shall therefore content myself with a few remarks on articles which particularly interested me in each section. Needless to say, I do not mean to imply that articles which I do not explicitly discuss are less valuable than those which I do.

(*a*) Prof. Dawes Hicks's article on Critical Realism is an extremely valuable one. He begins by showing that epistemology in the sense of criticism of categories is a necessary part even of the most realistic philosophy. Then he argues that perception is essentially an act of discrimination and not one of synthesis, and that physical and physiological processes call forth these acts at given moments, but do not create their objects or any part of them. Acts have contents, but the content of an act is never its object nor a quality of its object. Russell's theory of the physical world is criticised on the following grounds: (i) sense-data are the products of analysis of developed perception not primitive materials; (ii) there is no such thing as mere acquaintance, and the Russell-Whitehead theory of physical objects makes them more radically subjective even than Kant's; (iii) unsensed *sensibilia* never can be sensed, and are in the position of things-in-themselves; (iv) the distinction between appearance and reality breaks out even within the world of sense-data. As regards these criticisms I agree entirely with (iii) which I have myself insisted upon in the *Proceedings* for 1914-1915 (pp. 236-237). But I think that something like acquaintance is needed even on Dr. Dawes Hicks's theory, for we need to be acquainted with a vague mass before we can perform acts of discrimination upon it. That sense-data may have parts which we cannot distinguish, and relations which we do not detect is true, but not, so far as I can see, any objection to Russell's theory; we only have *appearances* when something with a positive sensible character, such as a visible ellipse, is contrasted with something with an incompatible character, such as a round penny, which is yet regarded as specially correlated with the penny. I still cannot follow Prof. Dawes Hicks's view about sensible appearances; I do not see how a visible ellipse can be a 'way' or 'mode' of looking at a round penny.

Passing to the nature of mind, Prof. Dawes Hicks rejects the view that it consists of acts differing only in the objects to which they are directed, and also the view of neutral monism. He is nearer the first view, but differs by giving each act a content, correlated, if I understand him aright, with its object. The relation of act to content is compared with that of colour and red. Contents can be revived, but it is not explained what precisely this means. Does it mean 'acts with the same content can recur'? If so, do they have the same object? Surely not, as a rule. If not what becomes of the correlation of content and object?

(*b*) Dr. Carr's article on Recognition deals with the familiarity of an object which we feel because of an earlier experience, and the ability of animals to deal with certain situations for the first time when they can have had no previous personal experience of them. Our feeling of familiarity, he argues, does not in general depend upon memory of the past experience and comparison with it. This seems to me to be true. Nor does it depend on repetition, for there is none. Here I cannot follow Dr. Carr. I agree (*a*) that there is never complete repetition, and (*b*) that no amount of repetition would be a *sufficient* condition of the feeling of familiarity. But (*c*) it seems certain that when I visit a town for a second time my sense-data must be very similar to those of which I was aware on my first visit, and that if they were not my judgment that it is the *same* town would be baseless. According to Dr. Carr all my experience leaves traces which at any given moment constitute a total system into which a present experience must fit itself. This again seems to me true, and to be a necessary condition for recognition though not a sufficient one. For, since, on this view, *all* my present experiences have to fit into this frame, we have no explanation why some only of them are accompanied by the special feeling of familiarity. The 'instinctive recognition' of young animals, Dr. Carr explains by a metaphysical theory of the unity and continuity of 'life'; but I think we need to be much more certain than we are at present as to whether these external acts are the accompaniments of a feeling of familiarity before it bcomes worth while to theorise about their conditions.

(*c*) Mr. Bartlett's paper on Valuation and Existence is extremely interesting. He argues that the earliest stage of value arises from the mere fact that some stimuli are responded to by a given individual more readily than others. At this stage there is a total mass consisting of act, object, and feeling, but these are not discriminated by the individual. There is thus no judgment or Annahme of existence. At the next stage the feeling is discriminated from the act and the object, but these are not discriminated from each other. (It may be worth while to point out that at these two stages, though there is no explicit judgment of existence any more than there is complete discrimination of the three factors in the complex, the complex and its factors do actually exist.) At the next stage, which is the first at which definite judgments of value occur, the three factors are discriminated; æsthetic and economic valuation applies to objects, moral valuation to acts. Æsthetic judgments seem to contain no reference to existence, economic ones contain a reference to actual or possible human needs, moral ones only apply to acts thought of as occurring. Lastly there is no reason to identify value with something common to the various specific kinds of value such as beauty, goodness, etc. To say that a thing has value may only mean that it has one or more of these specific characteristics. Again value belongs to objects, not to objectives, and we may know that a thing is valuable without knowing that it exists, but we cannot know that it is valuable if we know nothing further about its nature as Urban seems to suggest.

(*d*) Miss Stebbing's contention in her paper on Relation and Coherence is that the doctrine of external relations, and Mr. Bradley's argument against relations alike depend on viewing terms as something which 'get into' relations with each other instead of being, together with their relations, factors in a complex whole. In her view some terms are quite independent of their relations, *e.g.*, numbers, others differ when related by a certain relation from what they were when not related by it. *E.g.*, a man alters in some of his qualities when he becomes a father. I do not think that Miss Stebbing sufficiently distinguishes the three questions: (i) If $x\text{R}y$ changes to $x\text{S}z$ does this logically necessitate a qualitative change in x? (ii) May it be followed causally by a change in x's qualities. (iii) Given a relation may *any* sort of term be a referent or a relatum to it, or is there an *à priori* restriction of referents and relata to certain classes? I presume that Russell would answer (ii) in the affirmative and accept the second alternative in (iii) and merely deny (i).

(*e*) Prof. Bosanquet is concerned to answer objections brought against his theory of the state by Mr. Cole, Mr. Russell, and others, and to consider what light it has to throw on the question of an international authority. He argues that the state cannot be compared with any other association (i) because it expresses the general will, and (ii) because it is necessary to have some institution whose orders shall be final as against the conflicts of other institutions. Essentially a state exists to contribute to the general good in a certain specific way peculiar to each state. War between states arises mainly from their own internal imperfections. An international authority is not likely to work because it is doubtful whether there is any general will common to all civilised nations. With much that Prof. Bosanquet says I agree, but he also makes some very astonishing statements. In the first place the general will seems to me to be either a pure fiction or at most a high-sounding way of saying that a government cannot be carried on if it too persistently opposes the very strong desires of an influential section of its subjects. Prof. Bosanquet's contention that the will of any particular citizen is abstract and fragmentary compared with the general will of his state is to me simply unintelligible. Nor does this view seem consistent with the writer's quite just contention that it is absurd to judge a state by the same moral criteria as a private citizen, since it has entirely different tasks, and acts in an entirely different medium. Surely if this be so, there is no comparison between the will of a citizen and the 'will' of a state.

Again, Prof. Bosanquet argues quite plausibly that he has as much right to discuss 'the state' and not 'states' as a professor of engineering has to discuss 'the steam engine'. To this, however, we may reply that any existing steam-engine resembles 'the steam engine' very much more than any existing state resembles 'the state' as described by Prof. Bosanquet. If books about 'the steam-engine' discussed an engine which was (i) worked by petrol and (ii) disobeyed the laws of thermodynamics, they would not throw much light on any actual steam-engine. Now Prof. Bosanquet's theory of 'the state' does seem to be analogous to such a theory of 'the steam-engine'. For (i) all actual states are worked mainly by inertia, fear, and various tribal illusions on the part of the governed, and ambition, interest, and occasionally a genuine desire for the general welfare on the part of the governing class.[1] And (ii) a will which is the will of no one in particular is as much a fiction as a heat-engine disobeying the second law of thermodynamics. As to an international authority, I am afraid it is likely to break down, but not for the reasons that Prof. Bosanquet gives. The reasons seem to be (i) that it merely has its obvious rationality to recommend it, and it has no tribal illusions for it and all tribal prejudices against it. (ii) It is doubtful whether in the most favourable circumstances it could exercise so much power compared with the separate states as to make resistance to its orders practically hopeless, as is the resistance of a criminal (unless he be very wealthy or a member of an important trades union, or has a pull on some member of the governing class) against his state. (iii) Prof. Bosanquet is, however, quite correct in holding that a third difficulty is that questions arise between states where it is impossible to say which is right, and where it is impossible to judge by established legal principles. Such questions arise over national expansion, and may be compared with a strike where the workmen consider that they are entitled to an entirely new standard of life and culture, and the masters consider that they are defending such culture as already exists against a levelling down of everything to a state of universal mediocrity.

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[1] In fact the attitude of most reflecting people in England, France, and America, at any rate, towards their government is not that they *will* its actions or respect its spokesmen but that they *tolerate* them, having no hope of substituting anything better. The attitude of the poor is more definitely hostile even than this, except in moments of patriotic excitement.

C. D. Broad.

VII.—NEW BOOKS.

The Self and Nature. By DE WITT H. PARKER. Harvard University Press, 1917. Pp. vii, 316.

THE author's aim in this work is "to study in a direct and simple fashion the great problems of metaphysical philosophy" (p. vi), and, judged in respect of this aim, his treatment of the subject deserves high praise. He goes to work in a business-like way, keeps steadily in his discussion to such points as seem to him to promise a real advance in the argument, and tries throughout to state his results clearly and simply. In consequence the book is commendably brief without being scrappy. It would, I imagine, prove very useful as a basis for discussion in a seminar or in conjunction with a lecture course. As a substantive contribution to metaphysics it can hardly claim so favourable a verdict, because in many places the author's views do not seem to be really well thought out.

While claiming unity and consistency for the work as a whole, Prof. Parker points out that each large problem receives independent treatment in a separate chapter. In the following brief notes it will be simplest to take the chapters in order as they stand. The method of metaphysics, I should add, is defined to be "radical empiricism extended through the imagination" (p. vi), and we are told that metaphysics, while it uses "the larger facts and broader generalisations of science," nevertheless "differs fundamentally from science in being radically empirical and critical, and in passing from the part to the whole".

The first chapter, on "The Self and the Mind," is conveniently summarised by the author as follows: "We have found that the unity of the mind consists, in the first place, of the contact of the self with content; and, in the second place, of the interweaving of the many activities, which are the self, one with another" (p. 27). This summary, though very brief, indicates quite well the character of the full discussion, and at the same time suggests the criticisms which one would be inclined to make on it, that it turns too much on metaphorical expressions like 'contact' and 'interweaving,' and, secondly, that an activity surely implies an agent, and that "the many activities" can hardly *be* the self *of which* they are the activities—so much one may surely say without invoking any "transcendental ego".

In chapter ii., on "Personal Identity," Prof. Parker first criticises various theories which seem to him unsatisfactory, and then gives a view of his own for which in the Preface he is inclined to claim some special originality. Two brief quotations will serve, I think, to indicate both the character of his view and the sort of criticism to which it lays itself open. Personal identity, we are told, is something "just as simple and irreducible as blue" (p. 42); and if one asks how we know this simple fact (or quality?), the answer is that "identity is found in experience . . . we have an 'impression' or 'feeling' of it . . . this 'feeling' is a fact" (p. 43).

In chapter iii., on "The Metaphysics of Perception," the author advocates a sort of Berkeleian sense-realism. But since he also holds that "the sensory content of people's minds in perception is always different" (p. 61), he has to face the question of the sense in which, *e.g.*, people at a concert may be said to hear "the same symphony". His answer is that they do so "if we mean by the symphony a universal, a type". "Now, in large measure, the sameness of the object even in ordinary perception is of just this nature. When we say that we perceive the same rose, we do not so much mean that we are in contact with parts of a single region of the physical world as that we are undergoing experiences of the same type. We are seeing the 'same rose' just as we are 'having the same pleasure' in it. The contents of our minds are numerically different, yet they are similar in various ways" (p. 62).

In chapter iv., on the "Relation between Mind and Body," Prof. Parker criticises at some length the theory that the body is the instrument of the mind (*e.g.*, in a Bergsonian sense), and then more briefly the theories of interaction and parallelism. For his own part he advocates what he calls the "expression theory," but, as is apt to be the case when interaction and parallelism are both rejected, the alternative theory remains somewhat obscure.

Chapter v., on "Time," contains some statements which seem very loose, such as this: "All except an infinitesimally small segment of time consists, not of real events, but of the truth about events" (p. 108). But the concluding pages of the chapter give a very good exposition of the relativity of time-measurement and duration.

The following quotations summarise the author's view on "Causality and law in Nature" (chapter vi.), in respect of which he acknowledges obligation to Peirce (p. vii.). "There are just two types of necessity known to us—the logical and the purposive. That there is no logical necessity in natural phenomena was proved by Hume, and the recent attempts to show the contrary we have found to be failures. The other remains. We cannot, to be sure, prove that it exists in nature; yet that it may exist there without contradiction we shall attempt to show. It is, at any rate, the only hypothesis which we are capable of framing" (pp. 144-145). "Law is a development. The first responses, the original evaluations, are subject to no law. There is necessity and law only when there is a will seeking fulfilment. But under novel conditions we do not know what we want, we have as yet no will; hence there is no necessity that we should react in one way rather than in another. Only when the response is made and an estimation fixed, a habit formed, is there a law. Things first act fortuitously" (p. 152). Yet in another place we find our author assuming all the logical necessity that any one need want. "All scientific prediction rests upon the assumption, I take it, that a system isolated from outside influences will go as we find it going, and will exhibit no new tendencies, unless they are awakened from the outside. We are able to get hold, once and for all, of the substance which we are studying, which we could not do if it were subject to irresponsible changes from within" (p. 146). This is merely a special form of the causal assumption that a thing will behave according to its nature and not arbitrarily. The connexion in will between purpose and realisation rests on no other basis.

The chapter on "Space" (vii.) is not unlike that on Time in its merits and defects, but additional difficulties are raised by the author's 'metaphysics of perception'. The following are examples of the looseness of statement in which Prof. Parker indulges himself. "Spatial order is an anticipated temporal order" (p. 163). "Every place is a transaction between us and the forces in the environment" (p. 170). "We know that time has no existence independent of motion—that it is itself only a system of motions" (p. 171).

In chapter viii., on "The Nature of Knowledge and the Metaphysical Status of Universals," Prof. Parker seeks to defend a 'representative' theory of knowledge, but without, I think, sufficiently recognising the ambiguities and limitations of such a view In the middle section of the chapter he criticises Russell's view of the reality of universals, and goes so violently to the opposite extreme as to maintain that universals "are of the same type as fictions, with as much and no more reality" (p. 195). The later section of the chapter contains some good criticism of Royce's "assimilation of meaning to will" (p. 201), and of Bergson's disparagement of the fixity of the concept.

In chapter ix., on "The Theory of Relations," Prof. Parker examines critically the monadistic, monistic, and Russell theories, and then on the basis of this criticism tries to arrive at a satisfactory theory. The chapter seems to me to be much the best in the book, and to form an excellent introduction to the whole problem, though I am not sure that the criticism of monadism is altogether consistent with the author's own 'metaphysics of perception,' or that he does full justice to the monistic theory. But as regards the latter point one must admit that it is difficult to avoid interpreting Bradley in a Spinozistic sense.

In chapter x., on "The Unity of Minds," the difficulty of reconciling the positions now maintained with the earlier 'metaphysics of perception' seems to become greater still. The author operates freely with the conception of a "mind of nature". "Because a sense element in your mind is not in mine also, it does not follow that both are not together in the mind of nature. Just the opposite, we claim, is the case" (p. 277). This "mind of nature" is not an absolute or all-inclusive mind—a conception which our author rejects—yet it "overlaps" with our minds. On page 290 we find him even saying that the minds of different selves may "overlap". How all these diverse views are to be reconciled I cannot see, but this may be due to some misunderstanding on my part, since the author himself considers that "the doctrine of the nature and unity of mind expounded in the early chapters . . . determines the point of view of the entire book" (p. vi). The present chapter contains also some speculations on such matters as the origin of the self, life, and mind, from which one gains no great enlightenment. What, for instance, the object of putting down a sentence like the following can be, it is not easy to see: "Some stirring of unrest in the bosom of nature, incompatible with its own way of existence and so incapable of development there, led to that fission of its substance whence sprang life and the human mind" (p. 287).

In the concluding chapter the author maintains that philosophy cannot prove, and must in fact renounce, the ideas of immortality, whether for the individual or for the race, and of theodicy. "Our democratic ideal of the good is incompatible with theodicy" (p. 312), *i.e*, I suppose, incompatible with the supremacy of a single purpose in the universe. The last pages of the book tell us what, in view of these conclusions, we are to think of the cosmos and of ourselves, but the argument becomes rather weak and inconsistent towards the close.

H. BARKER.

Instinct in Man. By JAMES DREVER. Cambridge University Press, 1917. Pp. x, 281.

In the prefatory note we learn that this essay was written for the doctorate degree of the University of Edinburgh. In what may be regarded as an historical introduction the author traces out the psychology of natural inclination or instinct from Hobbes to Dugald Stewart and also the philosophical and scientific views which have shaped current theories. This is far from being the least interesting part of the book, though the author tells us "the essential portions of the essay are those represented by chapters v.-xi.".

Here the author leads up to his own theory by giving a critical examination of the theories of Bergson and of the writers in the symposium on Instinct and Intelligence published in the *British Journal of Psychology.*

Drever denies that in instinct there is any kind of mysterious innate knowledge. The knowledge in instinct is "the knowledge involved in perceptual consciousness". The opposition between instinct and intelligence is thus false unless it is interpreted as the distinction between perceptual consciousness and conceptual thought. In this he is in agreement with Stout and Myers. Like M'Dougall, the writer with whom he is most in sympathy, Drever views instinct as at the basis of all intelligent behaviour. "Instinct is the 'life impulse,' becoming conscious as determinate conscious impulse. But this in itself is only one side of the psychological fact, and an abstraction. The other side—also an abstraction—is sensation. The psychological fact itself is experience in its lowest terms." He recognises three factors perceptual or instinct-experience: "(*a*) a felt impulse, (*b*) an apprehended object or situation, (*c*) a feeling of interest or 'worthwhileness,' passing into 'satisfyingness'". The feeling of interest is regarded as fundamental, it is of the "primary tissue of experience". It is this which constitutes meaning in instinctive experience. "Meaning is affective, not cognitive on its first appearance." Drever has an appendix on meaning as affective. He asserts, "There is always an affective element in psychological meaning," and "this element is the primary and original factor without which meaning, as such, could never arise, and which actually, if we may put it that way, converts the bare sensation into experience". "Assuming that the experience apart from this affective element is a bare 'thatness'—it is the affective element which gives the experience its primary 'whatness'". If by this Drever means that the simplest experience we can conceive is always an interrelation of sensation, affection, and conation, it is difficult to see what is his quarrel with Stout, whose doctrine of primary meaning he challenges. But if he means that one of these abstract aspects of experience is more fundamental than another, and that that one is the affective, then his argument is hard to follow. He himself seems to posit "thatness" as prior to "whatness". The transformation from "thatness"—could there be such an experience—to "whatness" would require an experient for whom life had an affective aspect, but this is not to say that "whatness" as *experienced* is affective. If Drever intends to say this he cannot surely be using the term affective for that which is "subjectively subjective," but for something objective, in which case "affective" seems an unfortunate label. In dealing with instinct on the basis of interest the psychologist seems faced with two alternatives. He must either describe instinctive interest in such a way that to claim of a human being that he has instinctive interests, is to say no more than that he is mentally alive, or he must attempt to make some distinction between instinctive interest and interest in general. Drever appears to accept the former alternative. He is severe on writers who in attempting to draw a line of demarcation fall back on the biological mechanisms and neural arrangements which run parallel with inherited dispositions and with those interests which characterise the species in contradistinction to the interests which are incidental to the individual.

By his analysis of instinct-experience Drever is precluded from accepting agreeable or disagreeable consciousness as a determining condition of behaviour. He puts forward the suggestion that at the level of human life agreeable and disagreeable consciousness should be regarded as analogous to emotion, developed from a primordial consciousness wherein pain (and possibly pleasure) was a sensation which had cognitive function. He is unable to endorse M'Dougall's view that emotion is the affective side of instinct; he regards it as the accompaniment of certain specific instincts. Emotion itself is a development from interest, a state of tension due "to the arrest of the impulse, to the denying immediate satisfaction of the interest". In harmony with his general theory is the technical distinction between appetite and instinct. The appetite tendencies represent the instinct tendencies of a more primitive conscious life, and the primitive emotions of these instinct tendencies have given rise to the "uneasiness" which now characterises appetite. By his view of interest Drever is forced to a very broad classification of the innate tendencies of man. On the one hand are the appetites, on the other the instincts. Both are subdivided into general and specific. The tendency to seek pleasure and avoid pain is general appetite, hunger and thirst are instances of specific appetites. Play, imitation, sympathy, and experimentation are general instincts. The last named seems like a patience-player's rubbish heap, it will take every form of perceptual striving which cannot be placed elsewhere. Specific instincts are subdivided into "pure" and "emotional". The former "are as a rule very difficult to differentiate from reflexes," *e.g.*, reactions of adjustment and attention, prehension, the latter comprise M'Dougall's principal instincts, fear, anger, etc.

Drever claims the support of Shand for his theory that emotion is due to arrested impulse, but he seems to have entirely missed the central point of Shand's treatment of an emotional system as that which organises instincts in the service of its own end. He leaves us as M'Dougall does with a collection of instincts which run various moments of life along diverse paths, but from which it seems impossible for systematic conduct to develop. This has consequences in his treatment of sentiment. He quotes with approval Morton Prince's definition of sentiment, "as an idea linked with an instinct". It is an acquired disposition for an emotion, and can only be formed when the ideational level of consciousness is reached. A disposition for a single emotion is not, of course, a sentiment in Shand's sense of the term. It is difficult to understand how such a disposition formed by the law of habit represents a higher level of psychical integration. Even granted that it is aroused by an idea instead of by a sense situation, how does it develop into an organisation? Drever tells us, "the fact that an idea already carries with it an emotion tends to cause other emotions to be easily aroused in connexion with it, and an emotional complex is therefore formed round the idea in question". But if emotion is the accompaniment of a specific instinct why should this tendency arise? Drever denies innate connexions between emotions. It is disappointing that this chapter which, from an educational point of view, should have been the most interesting in the book, does not add to our knowledge of the development and interrelation of sentiments.

Selection of certain features in the author's theory for criticism does not imply failure to appreciate the value of the essay. The detailed treatment of the instinct tendencies is excellent, and the book will be of interest and service both to the student of pure psychology and to those who are concerned with its application to social and educational problems.

BEATRICE EDGELL.

Social and International Ideals, being Studies in Patriotism. By B. BOSANQUET. Macmillan, 1917.

It is well to have in a collected form these interesting 'studies in patriotism'. They do not contain much that will be, as regards its substance, new to those who are familiar with Mr. Bosanquet's teaching; but they are full of the wisdom of a lifetime devoted to philosophy and social science. They lift their readers above that journalistic atmosphere of the moment from the influence of which it is so difficult, especially in a time like this, to shake oneself free.

Among the papers included may be specially mentioned the following:

'The Teaching of Patriotism'; 'Atomism in History' (dealing with the charge made by certain French critics against the Sorbonne of encouraging a pseudo-scientific ideal of historical study in alliance with a pseudo-democratic spirit which 'levels down,' and of thereby banishing philosophy and strangling literary culture); 'Is Compensation necessary to Optimism?'; 'True and False Idealism' (in this essay one sees Mr. Bosanquet at his most characteristic and best); 'The Meaning and Relation of Politics and Charity' (an admirable address delivered at a meeting of the Oxford C.O.S.); 'Selection by Maintenance of a Social Standard' (a discussion marked by sound sense and by a wholesome avoidance of 'wild-cat' schemes of eugenic selection); 'Three Lectures on Social Ideals'; 'The Function of the State' (in which Mr. Bosanquet replies to recent criticism—often stimulated by our present hostility to Germany—of what may be called for short the Hegelian conception of the State); and 'The Wisdom of Naaman's Servants' (a courageous and timely utterance).

Mr. Bosanquet's observations on the 'class war' (pp. 194, 230 ff.) and on the distinction of classes which it presupposes, are particularly valuable. The following passage (p. 234) will show the direction of his thoughts on this subject: 'It is an ineradicable tendency that as wealth and its control and enjoyment go to the productive class, so power and prestige go to the professional and political class. And this ineradicable tendency is also a fundamental principle, for it is essential to a decent society that prestige and ultimate power should not belong to wealth. This tendency is disguised no doubt by social appearances, which it is necessary to see through.' Hence a class distinction must always remain. But it is not in its essence a distinction between a capitalist class and a working class. Mr. Bosanquet points out (p. 236) that the principle expressed in the sentences just quoted underlies Plato's refusal of private wealth to his philosopher-kings.

Of war in its more usual sense, war as it is in all our thoughts to-day, Mr. Bosanquet has much to say that deserves attention. 'Can war be abolished absolutely or in principle?' he asks (p. vi); and is doubtful whether an affirmative answer can be given. 'For war means after all that there are things which man values more than his life or the life of others. And while this is so—and could we wish it to be otherwise?—can war be abolished absolutely or in principle? For, although the highest values are not competitive and cannot set men fighting, you can never be sure that mistakes as to the condition of their attainment may not do so.' War is, no doubt, an evil, but we cannot disentangle evil from good in the web of the world's past history, without destroying the fabric. The world-service rendered by Athens could not have been achieved without 'force, absolutism, and selfishness' (p. 267). Nor (as students of his philosophy already know) does Mr. Bosanquet look with favour on aspirations after the 'evanescence of evil' (p. 299). It is not on a future event that we are to fix our faith. The attempt to do this is in our author's eyes the weakness not only of much popular religion but also of the speculations of M. Sorel. 'The true thing' in these 'is his insistence on the necessity of suffering and conflict; although the solution by a future event . . . seems inadequate and indeed self contradictory' (p. 188).

It is noticeable that while Mr. Bosanquet says (p. 271) that religious phraseology would probably furnish the truest expression of the ultimate end of life, he nevertheless avoids the use of it. And this avoidance is, I think, not unconnected with a certain air of aloofness which sometimes tends to mar one's enjoyment of his writings—though no philosopher of our time has with more thoroughgoing responsiveness to the call of the community come down into the Cave and taken his share of the public burdens.

It is somewhat curious that on p. 18 it is remarked that 'the unquestioned achievements' of Englishmen are in 'poetry and politics'. Has Mr. Bosanquet not for the moment forgotten Newton and Darwin?

C. C. J. Webb.

The Essentials of Philosophy. By R. W. Sellars. New York: The Macmillan Company, 1917. Pp. x, 301.

This book is plainly an introductory text-book, and since the distinctive philosophical position which it contains has been already argued, much more adequately, in Mr. Sellar's work *Critical Realism* (reviewed in Mind, N.S., No. 100), it is fair, I think, to restrict this notice to a consideration of the merits of the *Essentials* as a mere text-book.

While the book is not formally divided into parts, it consists, in fact, of two parts, chapters i.-xi. (pp. 1-134) and chapters xii.-xxiv. The second part is eminently suitable for teaching purposes, provided always that the lecturer is content to limit his introductory course to reflective consideration upon the results and the methods of the natural sciences, and to reserve the problems of the significance of human life in relation to the Cosmos for later treatment.

The value of the first part for teaching purposes is much more doubtful. Mr. Sellars begins with a proof of the inadequacy of the Common Sense view of 'things'. He then turns to the philosophers and reviews Descartes and Locke as (in different ways) 'representative realists,' Berkeley as a successful critic of Locke, Hume as a 'veracious sceptic,' and Kant as an inadequate empiricist who made a number of 'vicious blunders,' but seemed to struggle in his own misguided way with a real problem. From this he goes to 'descriptive empiricism,' and (in about fifty pages) evolves the 'adequate' epistemological theory which he calls 'non-apprehensional critical realism'.

The start is judicious, but this author's historical discussion is seldom valuable and his proof of his own theory is too difficult and too much 'stressed' for beginners, and too confidently accepted for most readers. The student would almost certainly form the impression that the philosophical systems of Descartes, Locke, and the rest had the solution of the Common Sense theory of 'things' for their sole or primary object. Mr. Sellars' historical remarks are unavoidably superficial, but his treatment of Locke and of Kant is also misleading. A similar remark applies to the following statement: "Mr. F. H. Bradley is a good representative of a pretty empirical type of objective idealism. His chief argument in favour of spiritualism boils down to the *argument from content.* Find any piece of existence . . . and then judge if it does not consist in sentient experience" (p. 181). As for 'non-apprehensional critical realism' (however important it may be), Mr. Sellars admits that it is a novel theory of his own in which he differs from the new realists (English or American), the idealists, and all previous philosophers. He finds that his opponents are misled by the Common Sense fallacy that knowledge is or terminates in inspection. He must therefore expect both the unsophisticated student and the sophisticated teacher to find his central thesis difficult to accept and, perhaps, even to follow. In fact his procedure would only be justified for text-book purposes if he had either established an unassailable epistemology or else had submitted a hypothesis which everyone ought to master thoroughly if he hoped to be a philosopher. Mr. Sellars speaks as if he meant the former.

J. Laird.

The Spiritual Ascent of Man. By W. TUDOR JONES, D.Phil., with an Introduction by A. L. SMITH, M.A., Master of Balliol College, Oxford. London: University of London Press, 1916. Pp. x, 241.

This book does not attempt to set forth any original thought but rather, as the Master of Balliol says in his Introduction, to bring within the range of the ordinary reader the best philosophical thought of the time. It may very well have been suggested by Professor Aliotta's recent work *The Idealistic Reaction Against Science.* Certainly a noticeable feature of contemporary philosophy is its strong tendency to emphasise what we are accustomed to class as the spiritual values, more particularly the aesthetical and ethical. This is quite as true of what is sometimes called the new realism as it is of any distinct form of idealism. Everywhere there is manifest a strong reaction against the prevailing positivism of a generation fascinated by the success of the great scientific generalisations. Dr. Tudor Jones reviews the recent work of a great number of writers whose philosophical eminence is accepted and the keynote of their teaching he finds to be "that the meanings and values created by the needs of the human spirit have not been brought into existence by the material world or by our own physical bodies. Such meanings and values have their existence in themselves; they subsist in their own world—a world of spirit. The proofs of such meanings and values are not to be found in anything that is external to themselves or below themselves. They are indeed their own proofs, and their value consists in their setting up ends towards which the personality may move and, consequently, become a greater and deeper personality."

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Charles H. Rieber, *Footnotes to Formal Logic*, Berkeley, University of California Press, 1918, pp. 177.

Agnes Low Rogers, *Experimental Tests of Mathematical Ability and their Prognostic Value*, New York City, Teachers' College, Columbia University, 1918, pp. 118.

VIII.—PHILOSOPHICAL PERIODICALS.

Psychological Review. Vol. xxiv., No. 5. **J. B. Watson.** 'An Attempted Formulation of the Scope of Behaviour Psychology.' [The goal of psychology is the ascertaining of such data and laws that, given the stimulus, it can predict the response; or, given the response, can predict the nature of the effective stimulus. Psychology emerges from common sense, and is closely allied to physiology and medicine.] **A. P. Weiss.** 'Relation between Functional and Behaviour Psychology.' [The functionalists have never shown how mental activity may control action. Their conscious processes follow the conditions which bring about modification in behaviour, and hence cannot be said to control behaviour.] **H. Carr.** 'The Relation between Emotion and Its Expression.' [Emotion consists of three causally interrelated organic activities: the act (processes of adaptation to the objective situation). the emotion (processes reinforcing the act), and by-products of act or emotion. Certain aspects of all three 'express' the emotion to an observer.] **H. G. Kenagy.** 'The Theory of the Social Forces.' [In group relations, explanation must hark back to stimulus, disposition, and response, instead of halting upon the plane of mental interaction, suggestion, social consciousness, etc.] **D. Starch** and **I. E. Ash.** 'The Mental Work Curve.' [Study of the results of forty-five hours of addition. An incorrect addition takes longer than a correct one; slow workers make relatively more errors than rapid workers; long continuance of mental work produces a slighter reduction of speed and accuracy than is usually supposed.] **R. A. Cummins.** 'Individual Differences in a Normal School Class.' [Physical and mental tests of four men and nine women.]—Vol. xxiv., No. 6. **S. B. Russell.** 'Advance Adaptation in Behaviour.' [A memorised series of overt movements may be modified in such wise that every movement is incipient only, while yet the series is maintained; a secondary series of this sort is illustraby silent speech. A secondary series together with association accounts for purposive behaviour.] **P. F. Swindle.** 'Relevant and Irrelevant Speech Instincts and Habits.' [An experimental study of the speech habits and instincts of barbet and cockatoo leads to the discussion of certain problems of stammering and stuttering. It is found that human conventional speech is merely a form of behaviour of which stutters. stammers, and larger bodily movements (gestures) are the elements. To conventionalise is to train the individuals, who are to use these elements, to call forth in one another predictable responses. The author suggests a method of reducing the number of undesired and superfluous utterances.] **G. F. Arps.** 'A Preliminary Report on "Work with Knowledge *vs.* Work without Knowledge or Results".' [Ergographic experiments show that work without knowledge loses in efficiency, and that the condition is difficult or impossible to maintain if this work is followed or preceded by identical work with knowledge.] **M. G. Blanton.** 'The Behaviour of the Human Infant during the First Thirty Days of Life.' [Detailed observations upon a large number of infants show that the reflex and instinctive equipment of the child at birth is more complex and advanced than is usually supposed.] Discussion. **F. N. Freeman.** 'A Critique of the Yerkes-Bridges-Hardwick Comparison of the Binet-Simon and the Point Scales.' [Criticisms of Binet-Simon by the authors of the point scale are inessential, or obviable, or themselves applicable to the point scale.]

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. xxviii., No. 3. **C. Bird.** 'From Home to the Charge: A Psychological Study of the Soldier.' [A discussion of the psychology of the civilian in training and of the soldier in war, based on seventy-two publications. Emphasises the effect of epigenetic factors and the rapid adjustment to environment.] **P. F. Swindle.** 'Visual, Cutaneous, and Kinæsthetic Ghosts.' [Nocturnal visual ghosts may be accounted for by the behaviour of the positive after-image, and diurnal ghosts by the concurrence of positive after-image and induced negative effect of background. Similar phenomena may be obtained as the result of cutaneous and kinæsthetic training.] **W. F. Prince.** 'Psychological Tests for the Authorship of the Book of Mormon.' [Analysis of the proper names in the book shows the ruling complexes of the writer to be connected with Masonry and Morgan; the authorship of Joseph Smith, thus rendered probable, is confirmed by other incidents.] **H. T. Moore.** 'Laboratory Tests of Anger, Fear, and Sex Interest.' [Fear exerts the greatest disturbance; the capacities for fear and anger appear to be mutually limiting quantities.] **J. E. Downey** and **J. E. Anderson.** 'Retention of Skill after Lapse of Practice: Simultaneous Reading and Writing.' [Capacity is largely retained after more than two years, with rapid relearning and approximation to the earlier record. There were individual differences.] **A. P. Weiss.** 'A Limen Colour Mixer.' **C. L. Hull.** 'The Formation and Retention of Associations among the Insane.' [The power of forming associations is greatly impaired in insanity, while retentiveness is undisturbed The temporal fluctuation-span of the insane is about twice as great as that of normals.] **E. B. Titchener** and **H. P. Weld.** 'Minor Studies from the Psychological Laboratory of Cornell University.' **E. M. Alspach.** 'xxxv. On the Psychological Response to Unknown Proper Names.' [Intensive study of a responsive observer. The sound of the word is determining in 30 per cent. of the cases.] **E. G. Boring, A. Luce.** 'xxxvi. The Psychological Basis of Appetite.' [Appetite is not, like hunger, a determinate psychological formation.] **E. G. Boring.** 'On the Computation of the Probable Correctness of Differences.' Book Notes.—Vol. xxviii., No. 4. **E. G. Boring.** 'A Chart of the Psychometric Function.' **H. A. Richmond.** 'An Improved Method of Using the Telegraphic Reaction Key.' [Suspension; opening of thumb and finger.] **J. Peterson.** 'Some Striking Illusions of Movement of a Single Light on Mountains.' [The illusions may apparently be accounted for on the theory of muscular imbalance due to strain or fatigue. Perhaps the *ignis fatuus* has the same cause.] **P. F. Swindle.** 'The Biological Significance of the Eye Appendages of Organisms.' [Appendages which are physically obstructions to vision are biologically significant as enabling the organism to retain fixated objects.] **L. T. Troland.** [Preliminary Note: The Influence of Changes of Illumination upon After-images.' [The dimming contrast-effect and its reversal may both be due to the lessened resistance of a fatigued area to change in its state of excitation.] **W. R. Wells.** 'Value *vs.* Truth as the Criterion in the Teaching of College Philosophy.' [Psychologically a sympathetic presentation of idealistic systems should come first.] **P. F. Swindle.** 'The Term Reaction-time Redefined.' [A reaction-time is the time intervening between stimulus and a response in which we are interested. Direct or instinctive responses approach the reaction-time zero. A habit is a response with at least one reaction-time determined by the activity or activities intervening between presentation of stimulus and occurrence of the movement in which we are interested.] **A. S. Rogers.** 'An Analytic Study of Visual Perceptions.' [Visual perceptions show typical formations (mode of integration and temporal course) variously based on visual sensations, peripheral accessories, and central accessories. The visual sensations are at first the clearest; as the course is run, both number and clearness of constituents decrease, and the accessories take precedence over the visual sensations. The perceptions studied have four functions: figurational (meaningless), depictive (perceptual), and abstract and symbolic (intermediate or common to perception and thought). If the meaning is slight, the component processes both carry it and suggest further search; if it is more definite, the accessories may also perform an appreciative or orientating function. Meaning correlates only loosely with number and clearness of accessory processes. Kinæsthesis is not invariable.] **J. H. Leuba.** 'Ecstatic Intoxication in Religion.' [Intoxication provides gratification for certain deep needs and cravings, by bringing a sense of deliverance and energy.] **E. B. Titchener** and **E. G. Boring.** 'Minor Studies from the Psychological Laboratory of Cornell University.' **M. Cowdrick.** 'xxxvii. The Weber-Fechner Law and Sanford's Weight Experiment.' [Practice leads to conformity with Fechner's formula and to divergence from that of Fullerton and Cattell.] **L. B. Hoisington.** 'xxxviii. An Example of the Fractionation of Data from the Method of Constant Stimuli for the Two-point Limen.' **R. L. Crane.** 'xxxix. The Effect of Absolute Brightness upon Colour Contrast.' [Maximal saturations are induced in greys of approximately the same brightness as the inducing colour.] Book Review. Book Notes.

JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS. xiv., 12. **W. M. Urban.** 'Ontological Problems of Value.' [Attempts to justify the common assumption "that reality and value are ultimately one." Admitting that 'reality' cannot be identified with 'existence,' potential existence or subsistence, and contains an "eulogistic element" as a "necessity of thought," the "logical priority of value" is justified because "every value presupposes the reality of its object," *i.e.*. the claim to reality is accepted as a proof of it.]. Report on the New York Branch of the American Psychological Association by **A. T. Poffenberger.** xiv., 13. **E. A. Singer.** 'On Sensibility.' ["It is the observation of a certain difference of lives that has stung the primitive biologist into inventing mind," and "the empirical or pragmatic method of defining mind begins by identifying what you would do to find out whether a being had a mind or not with what you mean by mind," *i.e.*, "the criterion of mind constitutes its definition". So sensibility is defined as "any body that reacts with a purpose we call its own to a change of mechanical conditions within its contours displays sensibility". The intensity of as pure sensation as can be found is to be ascertained from the reactions of *paramecium* to the stimulus of different water-temperatures; as for quality, "it is only when a subject responds to one quality of stimulus in a way it does not react to another that we have any reason for attributing to it sensations of different quality".] **C. I. Lewis.** 'The Issues concerning Material Implication.' [Reply to Wiener in xiii., 24. Denies that Russell's 'material implication' is "the relation we ordinarily have in mind when we say that *q* can be inferred from *p*," and that it should be adopted: it leads to the peculiar theorem that 'a false proposition implies any proposition,' and to many theorems "which can never be of the slightest value as principles of inference". Wiener has not refuted the charge that Russell's postulates though true may "materially imply theorems which are *quite irrelevant*," and so "it is *not demonstrated* that the theorems of the system of material implication can be inferred from the postulates".] xiv., 15. **D. Drake.** 'A Cul-de-Sac for Realism.' [Epistemological (naïve) realism is impracticable because "the character of our sense-qualities is a function of the nature of our sense-organs and brains and our position in space".] **F. J. E. Woodbridge.** 'Comment on Prof. Brown's "Matter and Energy".' [*Cf.* xiv., 3. Objects to his use of 'practical'.] **H. C. Brown.** 'Concerning Professor Woodbridge's "Comment".' [Explains.] **E. L. Thorndike.** 'On the Function of Visual Imagery and its Measurement from Individual Reports.' [Good visualisers have only a very slight advantage over bad in judging relative magnitude or proportion.] xiv., 15. **S. E. Jelliffe.** 'Priority and Progress.' [A Freudian rhapsody.] **H. W. Wright.** 'Spirit and Matter: A Reply to Dr. Dashiell.' [*Cf.* xiv., 3. Objects to the 'scrapping' of old problems by pragmatists.] **E. L. Schaub.** Report on the Seventeenth Annual Meeting of the Western Philosophical Association, which chiefly discussed the reality of History and of God, and man's independence of his physical orgmism and environment. xiv., 20. **H. N. Wieman.** 'A Criticism of Coordination as Criterion of Moral Value.' [Organisation does not necessarily mean coordination and harmony, and there is in man "an ineradicable interest which cannot be satisfied save in the balanced interplay of antagonistic impulses". Thus there may be conflict which is creative of value, as well as destructive, *e.g.*, in discussion or investigation of problems, and it would be a great moral achievement to "make maladjustment and discord as such a form of positive value".] **H. K. Häberlin.** 'The Concept of the Unconscious.' [Suggests that the unconscious is a limiting concept due to the fact that "no idea is entirely conscious" because in every experience there is much that is not in the focus of attention, but nevertheless "felt," and the source of the affective tone. Hence "in all cases of so-called unconscious processes we are really dealing with an affective tone which cannot be amplified into an ideational image of the experience represented. The dynamic metamorphosis of the affective to the ideational is for some reason inhibited. The non-actualised affective tone refers back to a specific experience in exactly the same way as does an act of memory. It is called unconscious because its subject-matter is not visualised in the form of an idea."] **B. W. Van Riper.** 'Philosophy and Edification.' ["Philosophy must always have a personal aspect or bearing, because it deals with the very setting of life."] xiv., 21. **A. H. Lloyd.** 'Psychophysical Parallelism: A Psychological Episode in History.' ["Life's values have been kept aloof and institutional, and have been in-so-far other-worldly and impractical, while life's real work, hard and 'practical,' has been extra-mural and so unspiritualized."] **D. W. Fisher.** 'Prof. Urban's Value-Theory.' [Rigorous criticism under ten heads.] xiv., 22. **H. B. Alexander.** 'Rousseau and Political Humanitarianism.' [A survey of social theory *apropos* of C. E. Vaughan's edition of Rousseau.] xiv, 23. **H. J. Davenport.** 'Scope, Method, and Psychology in Economics.' [Contrasts and discusses the views of H. W. Stuart (in *Creative Intelligence*) that the ethical and economic fields interpenetrate, and of Warner Fite that whatever is economic is as such not ethical.] **D. L. Geyer.** 'The Relation of Truth to Tests.' [Demands a clear distinction between the definition and the criterion of truth, and objects to their identification by the pragmatic test of verification. (1) How many tests are required? (2) made by whom? (3) if verification is not infallible, how can it yield a definition? (4) how about accidental discoveries? B. Russell's views are then criticised and rejected because "we cannot know in any given case whether we are genuinely or only apparently in touch with reality". C. S. Peirce's definition of truth as the 'limit' to which opinion ultimately tends is psychological and "obviously useless as a criterion". It is then admitted that experiment is the first and most decisive test. Then come coherence, clearness and distinctness of idea, simplicity, unconceivability of negation, etc. But as the premises from reasoning can never be proved to be absolutely true, "it seems best to call the results secured by the formal tests not absolutely true but absolutely valid". Finally, therefore, the author accepts (from Poincaré and Alfred Sidgwick) the rejection of absolute truth which his first three objections to pragmatism had begun by presupposing.] **B. Ruml.** 'Coefficients of Diagnostic Value.' [To show that the Bravais-Pearson coefficient of correlation is misleading.] xiv., 24. **F. C. S. Schiller.** 'Aristotle and the Practical Syllogism.' [To show that the doctrine so called is not adequately stated in *Eth. Nic.*, vii., 3, does not yield an adequate account of the application of logic to action, does not explain ἀκρασία, has not anticipated Dewey's account of practical judgments, and is not a refutation thereof. On the contrary, there is to be found in Aristotle an incipient recognition that truth and falsity are logical *values*, and this should conduct to the conclusion that "all judgments which claim 'truth' are, in a very important sense, 'practical'".] **W. R. Wells.** 'Two Common Fallacies in the Logic of Religion.' [(1) "The pragmatic fallacy" is "a confusion between the value and the truth of religious beliefs," (2) that of the "false attribution" of "the so-called religious experience to outside, 'higher,' forces in cases where, in reality, the cause of the experience is merely physiological—from 'below' and not from 'above'". James is accused both of making the truth synonymous with the survival value of beliefs and of encouraging the mystics' 'false attribution'.] **D. Drake.** 'Dr. Dewey's Duality and Dualism.' [A reply to xiv., 18.]

REVUE DE MÉTAPHYSIQUE ET DE MORALE. Vol. xxiv. No. 3. May, 1917. **A. Espinas.** 'L'idée initiale de la philosophie de Descartes.' [With this article should be compared an important article by G. Milhaud in a recent number of this *Revue*.] **V. Delbos.** 'De la méthode en histoire de la philosophie.' [The second of Delbos' posthumous lectures (see the notice of the *Revue* for March, 1917). This lecture is occupied with the materials of the historical reconstitution of doctrines.] **L. Couturat.** 'La logique algorithmique et le calcul des probabilitiés.' [Extract from a treatise on symbolic logic which dates from before 1902 and which was unfinished. This treatise is quite distinct from the later *Manuel de Logistique* which will shortly be published separately. The present article is of the greatest interest.] **A. Padoa.** 'Des conséquences d'un changement d'idées primitives dans une théorie déductive quelconque.' [Occupied with a mode of intellectual activity which follows a process that may be called 'impersonal,' which is exercised when we transform a given deductive theory, and in which the only modifications are a reduction or a replacement of the primitive ideas or postulates.] Questions pratiques. **G. Davy.** 'Pourquoi vaut la foi jurée. **R. H.** 'Réflexions sur la discipline militaire.'

'SCIENTIA' (RIVISTA DI SCIENZA). Vol. xxii., July, 1917. **G. Loria.** 'Lo spettro dell' immaginario in geometria.' [The imaginary in geometry has passed through phases of development which are strikingly like those brought out in the same author's paper on imaginary numbers in *Scientia* for February, 1917.] **H. de Vries.** 'La sélection directe dans les lignées pures' **H. Delacroix.** 'Le mysticisme et la religion. II$^{\text{ème}}$ Partie: Les rapports du mysticisme et de la religion.' **S. Webb.** 'The British Labour Movement under War Pressure.' **R. Michels.** 'La sphère historique de Rome.' Book Reviews. [Of interest to readers of Mind are reviews of E. Claparède's *Psychologie de l'enfant et pédagogie expérimentale* (Geneva, 1916), F. S. Chapin's *Introduction to the Study of Social Evolution: the Pre-historic Period* (2nd ed., New York, 1915), and Thomas Whittaker's *Origins of Christianity* (London, 1914).] Review of Reviews. French translations of articles in Italian and English. Vol. xxii., August, 1917. **C. V. L. Charlier.** 'Conceptions monistique et dualistique de l'univers stellaire.' **W. B. Wright.** 'The Interglacial Problem.' **E. Rignano.** 'Les diverses mentalités logiques.' ['The general conclusion is that, in the determination of the various characteristics of the logical faculty, which would be called intellective *par excellence*, the affective nature of the individual is of very great importance. Indeed it is to this nature that is due almost exclusively, as we have seen in our study of metaphysical reasoning, the great division of thinkers into positivists and metaphysicians. . . . It is also to the affective nature, as the present study has shown us, that—even in the positive field, the domain of pure constructive reasoning—is due the great division of logical minds into synthetic and analytic ones. The remarks on Germans' auditive nature as opposed to French and British visualisers are interesting whether true or not.] **A. Loria.** 'Problemi del dopo guerra.' **L. Levy-Bruhl.** 'Les aspects nouveaux de la guerre.' Book Reviews. [Those of particular interest to readers of Mind are of J. B. Watson's *Behavior: An Introduction to Comparative Psychology* (New York, 1915). F. de Saussure's *Cours de linguistique générale* (Lausanne and Paris, 1916), and M. Tougan-Baranowsky's *L'évolution historique du socialisme moderne* (Paris, 1913).] Review of Reviews. Chronicle. French translations of articles in English and Italian. Series ii. Vol. xxii., September, 1917. **F. Gomes Teixeira.** 'Le grand problème de l'antiquité: La quadrature du cercle.' [Short historical sketch from ancient down to modern times.] **A. Mieli.** 'Il periodo atomico moderno. Parte I$^{\text{a}}$. I dati del problema.' **Reginald A. Daly.** 'Origin of the living Coral Reef.' **Sir Erle Richards.** 'The Issues at Stake in this War.' **Giulio Diena.** 'Sur l'action que les États de l'Entente peuvent exercer pour le progrès du droit international.' Book Reviews. [Those of special interest to readers of Mind are K. Wicksell's *Vorlesungen über Nationalökonomie auf Grundlage des Marginalprinzipes: Theoretischer Thoeil*, vol. i., Jena, 1913; L. C. Marshall, C. W. Wright, and J. Field's *Materials for the Study of Elementary Economics*, Chicago, 1914: C. J. Bullock's *Elements of Economics*, New York, 1914; and W. Zawadski's *Les mathématiques appliquées à l'économie politique*, Paris, 1914.] General Review. **S. Jankelevitch.** 'Science pure et science appliquée.' Review of Reviews. Chronicle. French translations of articles in Italian and English.—Series ii. Vol. xxii., October, 1917. **Ph. E. B. Jourdain.** 'The Influence of Fourier's Theory of the Conduction of Heat on the Development of Pure Mathematics.' [Fourier's theory has been considered from the epistemological point of view by Mach. Here it is argued that a logical completion of such investigations as were begun by Fourier is necessary, both for ensuring the consistency with themselves and with one another of our physical theories and even for the purpose of possible experimental verification or disproof. Thus, from the standpoint of mathematical physics itself, the modern refined work on the logical principles of mathematics is important.] **G. Armellini.** 'Le comete e il calcole delle probabilità.' **Stanilas Meunier.** Les hypothèses récentes conernant l'origine et l'économie de la croûte terrestre.' **E. Carnevale.**

'L'intervention du Souverain Pontife au congrès de la paix' **A. B. Boswell.** 'The Polish Question.' Critical Note. **Alessandro Levi.** 'Vers la sociologie scientifique.' [On Vilfredo Pareto's *Trattato di sociologia generale*, Firenze, 1916.] Book Reviews. [The books on economics are A. W. Shaw's *Some Problems in Market Distribution* (Cambridge, Mass., 1915), and E. D. Durand's *The Trust Problem* (Cambridge, Mass., 1915).] Review of Reviews. French translations of articles in English and Italian.—Series ii. Vol. xxii., November, 1917. **J. A. Crowther.** 'The Electronic Theory of Valency and of Chemical Affinity.' **A. Federico Gredilla.** 'L'assimilation est-elle une fonction purement chimique?' **Edouard Claparède.** 'La psychologie de l'intelligence.' [The object of this article is to describe the method, etc., to be followed in an empirical study of the processes of intelligence considered synthetically, *i.e.*, in their vital relations, and also to sketch a conception of intelligence such as is suggested by the data of experience. The act of intelligence is a specific process, entirely distinct, both in its origin and in its practice, from the act of memory; it is a process whose function consists in readjusting action momentarily disadapted and whose practice can only be grasped by observation and experience.] **S. Gemma.** 'L'America e l'unità del diritto internazionale.' **Sir C. P. Lucas.** 'The British Empire.' Book Reviews. [Those books of philosophical and economic interest are H. J. Ford's *The Natural History of the State* (Princeton, 1915), H. W. Conn's *Social Heredity and Social Evolution: The Other Side of Eugenics* (New York, 1914), A. Levi's *La filosofia politica di Giuseppe Mazzini* (Bologna, 1917), and G. Ambrosini's *Marx, Mazzini e l'Internazionale socialista* (Campobasso, 1917).] General Review. **Aldo Mieli.** 'Quelques médecins et naturalistes italiens de la Renaissance.' Review of Reviews. French translations of articles in English and Italian. Vol. xxii. December, 1917. **Th. Moreux.** 'Les progrès de la Cosmogonie depuis son origine.' **Aldo Mieli.** 'Il periodo atomico moderno. Parte II^a: Tentativi di soluzione del problema.' **E. W. MacBride.** 'Recapitulation as a Proof of the Inheritance of Acquired Characters.' **Francis M. Burdick.** 'The Effect of the War upon the Uniformity of Laws of the Entente Powers.' **F. J. C. Hearnshaw.** 'Analogies et différences entre la Révolution russe et la Révolution française.' Book Reviews. [Those books reviewed include many on sociology, economics, and national questions.] Review of Reviews. Chronicle. French translations of articles in Italian and English. Index to vol. xxii.

IX.—NOTE.

A PROOF THAT ANY AGGREGATE CAN BE WELL-ORDERED.

THAT any aggregate can be well-ordered was stated by Georg Cantor, but he never succeeded in proving this theorem (*cf.* Cantor's *Contributions to the Founding of the Theory of Transfinite Numbers*, English translation, Chicago and London, 1915, pp. 60, 62-63, 66, 90, 109, 204-206). It is not difficult to see why a proof was not forthcoming; it seems to have been on account of the difficulties introduced by the indefiniteness which hangs about an infinite process of term-by-term selection from an infinite aggregate. In 1904 Zermelo published a form of the axiom which seemed necessarily to underlie this process of selection; in this paper I shall prove that any aggregate can be well-ordered, and hence that Zermelo's "axiom" can be proved from logical principles. The ordinal difficulty which I had considered in a paper of 1904, and which is the same as one previously found but unpublished by Cantor, is the logical source of the proof in question. It is of some interest that the apparently different difficulties of Zermelo's axiom and this ordinal contradiction are thus closely connected. Further, it is of some philosophical importance that a series such as the continuum can be rearranged in such a manner that for every term there is another which immediately follows it (*cf.* Prof. A. E. Taylor, article "Continuity" in Hastings's *Encyclopædia of Religion and Ethics*, vol. iv., part 2, p. 94).

Consider all those parts of a transfinite aggregate M which can be well-ordered, and suppose them to be well-ordered in all possible ways. We do not, of course, assume that one of these well-ordered parts of M is M itself or, for example, M lacking some member. This is what we have to prove. All that we require to know for the validity of what follows is that "x is a well-ordered part of M" is not false for all x's, and we can obviously be sure of this if M has any members at all. We will call a part of M which is well-ordered in type γ a "chain of M of type γ," provided that the same part in different orders—even though the part in all these orders may be of the same ordinal type—forms different "chains". Thus a "chain" is a class of couples (m, a), where m is a member of M and a is an ordinal number, and the couples are such that in each chain no m or a occurs more than once, and, if a occurs, all ordinals less than a occur also. A chain can be readily well-ordered by arranging the couples in the order of magnitude of the right-hand members (a). We say that a chain "exhausts" M if the class of left-hand members (m) of the couples of the chain consists of all the members of M. It should be noticed, by the way, that the concept of a "chain" can be generalised without much difficulty to the general concept of a "function" in mathematics. We also say that a chain P is a "segment" of a chain Q if P is identical with the chain whose terms precede some term of Q, both P and Q being, as always in this paper, well-ordered in the definite manner described above. Further, in this case we will say that Q "continues" P or that Q is "a continuation of" P.

Consider, then, the class M′ of all possible chains of M. It is, of course, for the above reason, not assumed that there is a member of M′ which exhausts M. If we examine the chains of certain simple aggregates, we find that there are two essentially different kinds. In the first place, it seems, at first sight, evident that, if chains of all types less than ω can be found among the members of M′, there is in M′ a chain of type ω. This has been admitted, for example, by Dedekind, Cantor, Whitehead (1902), and Russell (1903). However, it is now recognised that an exact proof of this conclusion cannot be carried through except by using a form of the axiom of Zermelo, or of what Russell and Whitehead called, from about 1904, "the multiplicative axiom". Indeed, Whitehead and Russell (1910) carefully distinguished "inductive" from "non-reflexive" numbers, and contemplated the existence of numbers which are both non-inductive and non-reflexive. But there seems to be no instance that we can construct that shows the falsity of the above conclusion. On the other hand, it is possible to show that chains of all types less than ω_1 may be found among the chains of an enumerable aggregate, although there is certainly no single chain of type ω_1 which can be extracted from that aggregate.

Thus, if a class of chains has members of all types less than γ, we cannot, in general, conclude that it has one of type γ. But if the class of chains is such that, if x and y are members of it and the type of x is greater than that of y, then y is a segment of x; and if we know that the chains give all the types less than γ, where γ has no immediate predecessor, we can obviously define by this class a single chain of type γ. Indeed, the members of the class build up a chain of which they all are segments. When a class of chains is of this special nature, but where γ need not necessarily have no immediate predecessor, we will say that it is a class of "direct continuations". The multiplicative axiom allows us to extract, out of any class of chains, a class of direct continuations; but we shall see that such a class can be extracted without a use of this axiom.

If M is an enumerable aggregate, it is not exhausted by chains whose types do not belong to Cantor's second number-class, and, for any number of the second class, there is a chain which exhausts M; secondly, the least ordinal that is greater than the types of all these chains is ω_1; thirdly, every chain of type belonging to the first number-class, and some chains of higher types, are segments of some of the chains of types belonging to the second class; fourthly, each chain which exhausts M is not a segment of a chain of any other type. We find that there are analogies with all M's.

The members of M′ fall into classes each of which contains chains having the same ordinal. Now, the first object of this investigation is to rearrange the members of M′ in classes of direct continuations (the types of the continuations ranging from 1 upwards) so that each of these new classes defines and is defined by a single chain. This will be done by a process of generalised mathematical induction: we prove that it can be done by a definite and uniform process for members of M′ of types 1 and 2, and that, if it can be done by the same process for all the members of types less than γ, where γ is any finite or transfinite ordinal, it can be so done for those—if there are any—of type γ.

Take all the members of M′ whose types are 1 and think of them as spread out before us and as forming the only members of classes of which the whole class is denoted by u_1. With each of these chains of type 1 put, for the moment, all those members of M′ which are of type 2 and also such that the chain of type 1 mentioned is a segment of them.

Imagine a chain identical with this chain of type 1 (a "double") for each of the chains of type 2 which are thus correlated to it. and put one of these doubles with each of the chain of type 2 just mentioned. If we do this for all members of M′ of types 1 and 2, we get a class u_2 such that, if y is a member of u_2, y is a class of direct continuations of types 1 and 2. Further, u_2 is formed from u_1 and M′ by a definite and uniform process.

Suppose that those members of M′ whose types are all the ordinals less than γ, where γ has an immediate predecessor $\gamma - 1$, have been transferred in this way so as to form classes of direct continuations; the class $(u_{\gamma-1})$ of these classes being such that, if x is a member of $u_{\gamma-1}$, x is a class of direct continuations of types $1, 2, 3, \ldots, \gamma - 1$. Of the members of M′ of type γ,—if there are any,—put in each x all those which continue the chains in that x. Then imagine doubles of the chains previously in x such that each of the *latter* members of M′ of type γ has a double to go with it and form new classes of direct continuations of types $1, 2, 3, \ldots, \gamma$; the class of these classes will be denoted by u_γ. Note that this u_γ is determined uniquely by the preceding u's, provided only that M′ has at least one member of type γ'. This unique determination of the whole series of u's so long as there are any members of M′ left is the most important part of this construction. Note also that we do not, by a more or less explicit use of the multiplicative axiom, pick out a particular member from $u_{\gamma-1}$ or a particular double. In fact, all the members of $u_{\gamma-1}$ are treated in the same way, and, though I speak, for the sake of what seems to me ease of visualisation, of *many* doubles of a certain chain or class of chains, it must not be forgotten that these doubles are really identical.

If γ has no immediate predecessor, we can evidently form a chain of type γ out of a class of direct continuations of all types less than γ. It must again be emphasised that we can conclude here from chains of types less than γ to a chain of type γ, without a use of the multiplicative axiom, only because all these chains are direct continuations. This conclusion was impossible so long as we considered a class of chains of types less than γ which were not all segments of those members of the same class which are of higher type.

Since, now, the whole series of u's is uniquely determined, we can conclude that, for any M, there is an ordinal ζ such that the formation of classes beyond class u_ζ is impossible. For if, for any ordinal ξ as great as we wish, chains of type ξ always occur in the series of u's, we may conclude that both the types of chains of M and the series of u's can be of the type of the series of all ordinals. Now, if β is the type of the series of all ordinals, we can conclude, as I have done in my paper in the *Philosophical Magazine* for January, 1904, that $\beta > \beta$, and that consequently some chain of M must come to an end before it reaches beyond the type λ, say. With this the main point of the theorem is proved, and further conclusions as to the form and distribution of such numbers λ belong to technical mathematics.

PHILIP E. B. JOURDAIN.

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—ON THE RELATION BETWEEN INDUCTION AND PROBABILITY—(Part I.).

By C. D. Broad.

In the present paper I propose to try to prove three points, which, if they can be established, are of great importance to the logic of inductive inference. They are (1) that *unless* inductive conclusions be expressed in terms of probability all inductive inference involves a formal fallacy; (2) that the degree of belief which we actually attach to the conclusions of well-established inductions cannot be justified by any known principle of probability, unless some further premise about the physical world be assumed; and (3) that it is extremely difficult to state this premise so that it shall be at once plausible and non-tautologous. I believe that the first two points can be rigorously established without entering in detail into the difficult problem of what it is that probability-fractions actually measure. The third point is more doubtful, and I do not profess to have reached at present any satisfactory view about it.

1.

All inductions, however advanced and complicated they may be, ultimately rest on induction by simple enumeration or on the use of the hypothetical method. We shall see at a later stage the precise connexion between these two methods. In the meanwhile it is sufficient for us to notice that, whilst the inductions of all advanced sciences make great use of deduction, they can never be reduced without residue to that process. In working out the consequences of a scientific hypothesis many natural laws are assumed as already established and much purely deductive reasoning is used. But the evidence for the assumed laws will itself be ultimately inductive, and the use which is made of our deduced conclusions to establish the hypotheses by their agreement with observable facts involves an inductive argument.

Now both induction by simple enumeration and the hypothetical method involve, on the face of them, formal fallacies. The type of argument in the first kind of induction is: All observed S's have been P, therefore all S's whatever will be P. Now the observed S's are not known to be all the S's (indeed they are generally believed not to be all the S's). Hence we are arguing from a premise about *some* S's to a conclusion about *all* S's, and are clearly committing an illicit process of S.

Most inductive logicians of course recognise this fact, but most of them seem to suppose that the fallacy can be avoided by the introduction of an additional premise which they call the Uniformity of Nature or the Law of Causation. They admit that there is a difficulty in stating this principle satisfactorily and in deciding on the nature of the evidence for it, but they seem to feel no doubt that *if* it could be satisfactorily stated and established the apparent formal fallacy in induction by simple enumeration would vanish. It is easy, however, to show that this is a complete mistake. Whatever the supposed principle may be, and however it may be established, it cannot be stronger than an universal proposition. But if an universal proposition be added to our premise, All observed S's are P, the latter premise still remains particular as regards S. And from a universal and a particular premise no universal conclusion can be drawn.

It follows then that no additional premise, whether about logic or about nature, can save induction by simple enumeration from a formal fallacy, so long as the conclusion is in the form all S's are P. If the validity of the process is to be saved at all it can only be saved by modifying the conclusion. It remains of course perfectly possible that some additional premise about nature is *necessary* to justify induction; but it is certain that no such premise is *sufficient* to justify it.

The hypothetical method equally involves, on the face of it, a formal fallacy. The general form of the argument here is: If h be true then c_1, c_2 . . . c_n must be true. But c_1, c_2 . . . c_n are all found by observation to be true, hence h is true. This argument of course commits the formal fallacy of asserting the consequent in a hypothetical syllogism. The only additional premise which could validate such an argument would be the proposition: h is the only possible hypothesis which implies $c_1, c_2 \ldots c_n$. But this proposition is never known to be true and is generally known to be false.

The conclusions of inductive argument must therefore be modified, and the most reasonable modification to make is to state them in terms of probability. The advantages of such a course are (*a*) that this accords with what we actually believe when we reflect. We always admit that the opposite of an inductive conclusion remains possible; even when we *say* that such conclusions are certain we only mean that they are so probable that for all practical purposes we can act as if they were certain. That this differs from genuine certainty may be seen if we reflect on the difference in our attitude towards the true propositions, All grass is green and $2 \times 2 = 4$. In ordinary language both would be called 'certain,' but our attitudes towards the two are quite different. No one would care to assert that there might not be in some part of space or time something answering to our definition of grass but having a blue instead of a green colour.

(*b*) With the suggested modification of our conclusion the logical difficulty vanishes. Suppose the conclusion becomes: It is highly probable on the observed data that all S's are P. There is then no illicit process. We argue from a *certain proposition* about *some* S's to the *probability* of a proposition about *all* S's. This is perfectly legitimate. The subject of our conclusion is no longer All S's, but is the proposition All S's are P. The predicate is no longer P, but is the complex predicate 'highly probable with respect to the observed data'.

(*c*) If inductions with their unmodified conclusions were valid forms of inference we should be faced by a strange paradox which furnishes an additional proof that inductive conclusions must be modified. It is often certain that all the observed S's are P. Now what follows from a certain premise by a valid process of reasoning can be asserted by itself as true. Yet we know quite well that, if the conclusion of an inductive argument be All S's are P, the very next observation that we make may prove this conclusion to be false. Hence we have the paradox that, if induction be valid and the conclusion be All S is P, a *certain* premise and a *valid* argument may lead to a *false* conclusion. This paradox is removed if we modify our conclusion to the form: It is highly probable on the observed data that all S is P. Probability and truth-value are both attributes of propositions.

I omit here further subtleties as to whether they do not more properly belong to propositional forms, or, as Russell calls them, functions.) But they are very different attributes. (i.) A proposition is true or false in itself and without regard to its relations to other propositions; a proposition only has probability with respect to others, and it has different probabilities with respect to different sets of data. (ii.) A proposition which is very probable with respect to certain data may be in fact false, and conversely. This is precisely what we mean by 'a strange coincidence'. It follows from these facts that if I have observed n S's and they were all P it may be highly probable relative to these data that all S's are P, and yet it may be false that all S is P. If I observe an $n + 1$th S and it proves not to be P, I know that it is false that all S is P; but this does not alter the truth of the proposition that, relative to my first n observations, it *is* highly probable that all S is P. For the probability of a proposition may be high with respect to one set of data and may be zero with respect to another set which includes the former. Our original inductive conclusion does not cease to be *true*, it only ceases to be practically important.

For all these reasons I hold that we have established the point that inductive *conclusions* must be modified if induction is to be saved and that no additional *premises* will suffice to save it. And I think it almost certain that the direction in which the modification must be made is the one which I have indicated above. Leibniz said in a famous passage that Spinoza would be right if it were not for the monads; we may say that Hume would be right if it were not for the laws of probability. And just as it is doubtful whether Leibniz was right even with the monads, so there remains a grave doubt whether induction can be logically justified even with the laws of probability.

2.

If we accept the view that inductive conclusions are in terms of probability, it is clear that a necessary premise or principle of all inductive argument will be some proposition or propositions concerning probability. Since probability, like truth, implication, etc., is an attribute of propositions, the laws of probability are laws of logic, not of nature, just like the principle of the syllogism or the law of contradiction. That is, they are principles which hold in all possible worlds, and do not depend on the special structure of the world that actually exists. It remains possible however that they are only capable of fruitful application to real problems if the actual world fulfils certain conditions which need not be fulfilled in all possible worlds. *E.g.* $2 \times 2 = 4$ holds in all possible worlds, but it would be very difficult to make any practical use of this proposition in physics if all objects in the actual world were like drops of water and ran together into a single drop when mixed.

To see what the principles of probability required by induction are, and to consider whether they suffice to justify the actual strength of our beliefs in universal propositions about matters of fact, I propose to consider induction by simple enumeration and the hypothetical method in turn.

A. *Induction by Simple Enumeration.*—The way in which I propose to treat this problem is as follows. I shall first consider the logical principles employed and the factual assumptions made when we draw counters out of a bag, and, finding that all which we have drawn are white, argue to the probability of the proposition that all in the bag are white. I shall then discuss as carefully as I can the analogies and differences between this artificial case and the attempt to establish laws of nature by induction by simple enumeration. We shall then be able to see whether an alleged law of nature can logically acquire a high degree of probability by this method, and, if not, what additional assumptions are needed.

We will divide the factors of the problem into three parts, (*a*) Facts given, (*b*) Principles of probability accepted as self-evident, (*c*) Factual assumptions made.

(*a*) The facts given are:—

(i) That the bag contains n counters indistinguishable to touch.

(ii) That we have no information at the outset of the experiment what proportion of the counters are white; there may be $0, 1, 2, \ldots n$ whites. (We know of course on *à priori* grounds that any one proportion, so long as it subsists, excludes any other, and that, at any given moment, one of these $n + 1$ possible proportions must subsist.)

(iii) That at the end of the experiment m counters have been drawn out in succession, none being replaced, and that these have all been found to be white.

(*b*) The principles of probability accepted as *à priori* truths are:—

(i) If p and q be two mutually exclusive propositions and x/h means 'the probability of x given h,' then

$$p \vee q/h = p/h + q/h.$$

(ii) If p and q be any two propositions, then

$$p.q/h = p/h \times q/p.h = q/h \times p/q.h.$$

(iii) If we know that several mutually exclusive alternatives are possible and do not know of any reason why one rather than another should be actual, the probability of any one alternative, relative to this precise state of knowledge and ignorance, is equal to that of any other of them, relative to the same data.

(iv) The present proposition is to be regarded rather as a convention for measuring probability than as a substantial proposition. It is: If p and q be coexhaustive and coexclusive propositions, then

$$p/h + q/h = 1.$$

(c) The assumptions which we make about matters of fact are :—

(i) That in drawing out a counter our hand is as likely to come in contact with any one as with any other of all those present in the bag at the moment.

(ii) That no process going on in nature during the experiment alters the total number or the proportion of the white counters, and that the constitution of the contents only changes during the experiment by the successive removal of counters by the experimenter.

It is clear that the propositions (c) are assumptions about the course of nature and have no *à priori* guarantee. This is perfectly obvious about c (ii), and it is evident that a factual assumption is an essential part of c (i) even if the *à priori* factor b (iii) should also somewhere be involved in it.

On these assumptions it can be proved that the probability that the *next* to be drawn will be white is $\frac{m+1}{m+2}$, and that the probability that *all* the n are white is $\frac{m+1}{n+1}$. I do not propose to go into the details of the argument, which involves the summation of two series. What I wish to point out is that all the nine propositions mentioned above are used in the proof and that no others are needed except the ordinary laws of logic and algebra. It is easy to see in a general way how the assumptions (c) enter. Suppose there were a kind of pocket in the bag and that non-whites happened to be accumulated there. Then c (i) would be false, and it is clear that a large number of whites might be drawn at first and give a misleadingly high expectation of all being white even though there were quite a large proportion of non-whites in the bag. Suppose again that c (ii) were false and that the proportion of whites might change between one draw and the next.

Putting the course of the argument very roughly indeed we may say that at the beginning we start with $n + 1$ equally likely hypotheses as to the constitution of the bag's contents. As we go on drawing whites and no non-whites we learn more of this constitution, certain of these hypotheses are ruled out altogether, the others have their probabilities strengthened in various degrees. But this is only true if we really do learn more about the constitution of the contents by our successive drawings; if, between these, the constitution changes from any cause, we have learnt nothing and the argument breaks down.

We can now consider how far the attempt to establish laws of nature by simple enumeration is parallel to the artificial example just dealt with. For clearness it is best to distinguish here between laws about the qualities of classes of substances [such as the law that All crows are black] and laws about the connexion of events [such as All rises of temperature are followed by expansion]. I do not suggest that this distinction is of great philosophic importance or is ultimately tenable, but it will help us for the present.

There is obviously a very close analogy between investigating the colours of crows and the colours of the counters in a bag. To the counters in the bag correspond all the crows in the universe, past, present, and future. To the pulling out and observing the colour of a counter corresponds the noticing of a certain number of crows. At this point however, the analogy fails in several ways, and all these failures tend to reduce the probability of the suggested law. (i.) The same crow might be observed several times over and counted as a different one. Thus m in the fraction $\frac{m+1}{n+1}$ might be counted to be larger than it really is and the probability thus over-estimated. (ii.) We have no guarantee whatever that crows may not change their colours in the course of their lives. (This possibility was of course also present in the artificial case of counters, and our only ground for rejecting it is in previous inductions.) (iii.) It is quite certain that we are not equally likely to meet with any crow. Even if we grant that any past crow is equally likely to have been met with and its colour reported to us, we know that the assumption of equiprobability is false as to future crows. For we clearly cannot have observed any of the crows that begin to exist after the moment when we make the last observation which we take into account when we make our induction. And the assumption of equiprobability is most precarious even as regards past and present crows. Neither by direct observation nor by the reports of others can I know about crows in any but a restricted region of space. Thus the blackness of the observed crows may not be an attribute of all crows but may be true only of crows in a certain area. Outside this it may fail, as whiteness has been found to fail in the case of Australian swans. Our situation then is like that which would arise with the bag of counters if (*a*) there were a rigid partition in it past which we could not get our hands (distinction of past and future cases), and (*b*) if the bag were much bigger than the extreme stretch of our arm and we could only enter it through one comparatively small opening (restricted area of observation in space). We may sum up this objection by saying that the argument which leads to the probability $\frac{m+1}{n+1}$ assumes that a 'fair selection' has been observed, and that in the case of the crows we know that a 'fair selection' cannot have been observed owing to the fact that I cannot *now* observe *future* instances, and that I cannot directly observe even contemporary instances in all parts of space.

It is easy to prove that when we know that a 'fair selection' has not been observed the probability of a general law must fall below and can never rise above the value $\frac{m+1}{n+1}$ which it reaches if the observed selection be a fair one. Let us suppose that all the S's that might actually have been observed were SQ's; that, *within this class*, the selection observed was a fair one, though not fair for the S's as a whole; and that the number of SQ's is ν. Then, since the number of SQ's examined was m and all were found to be P, the probability that all Sθ's are P is $\frac{m+1}{\nu+1}$. The number of $S\bar{Q}$'s is $n-\nu$; but, by hypothesis, none of these came under examination. Hence we have no information whatever about them, and the probability that any proportion from O to the whole $n-\nu$ inclusive is P is the same, *viz.*, $\frac{1}{n-v+1}$. Now the probability that All S's are P = the probability of the compound proposition: All SQ's are P and All $S\bar{Q}$'s are P. This cannot exceed $\frac{m+1}{\nu+1}\frac{1}{n-\nu+1}$. It is evident that this is less than $\frac{m+1}{n+1}$; for its numerator is the same, whilst its denominator is $n + 1 + \nu(n - \nu)$, which is greater than $n + 1$, since ν is a positive integer less than n.

(iv.) Lastly there is the following fatal difference even if all other difficulties could be overcome. In investigating the counters in the bag we know the total number n. It is finite, and we can make the number m of counters observed approximate fairly closely to it. We do not of course know the total number of crows that have been, are, and will be; but we can be perfectly sure that it must be enormous compared with the number investigated. Hence m is very small compared with n in the investigation of any natural law. Hence $\frac{m+1}{n+1}$, the probability of the law, as determined by induction by simple enumeration, is vanishingly small even under the impossibly favourable conditions of a 'fair selection'. In real life it will be indefinitely smaller than this indefinitely small fraction.

It must be noted, however, that from the same premises from which we deduced the expression $\frac{m+1}{n+1}$ for the probability that *all* S's are P we also deduced the expression $\frac{m+1}{m+2}$ for the probability that the *next* S to be examined will be P. A more general formula which can also be proved from the same premises is that the probability that the next μ to be examined will be P is $\frac{m+1}{m+\mu+1}$. These latter expressions, it will be noted, are independent of n. Hence, if we could get over the difficulties about a 'fair selection' and about possible changes in time and possible repeated examinations of the same S, induction by simple enumeration would play a modest but useful *rôle* even in the investigation of nature. If m were pretty large both in itself and as compared with μ we could predict for the next case and for the next few with tolerable certainty. But this assumes that the 'next case' is one which had as much likelihood as any other of falling under our observations, though it did not actually do so. In the case of persistent entities like counters and crows this condition may perfectly well be fulfilled, for the 'next' simply means the 'next which I happen to observe'. In the case of the counters the one which I shall pull out next was in the bag all through the experiment and was as likely to be taken out as those which actually were taken out. In that of the crows the crow that I shall next observe may have existed when I observed the previous ones, and may have been as likely to fall under my observation as any of those which actually did so. But, as we shall see in a moment, there are special difficulties about events which will not allow us to apply this reasoning to them.

We will now consider the connection of events. Much of what has been said about the investigation of the properties of substances remains true here, but there are the following differences to be noted. Suppose our events are rises in temperature. The class about which we wish to learn is all events of this kind past, present, and future. Now events, unlike substances, cannot change; each is tied to its own position in time and is determined by it. There is no possibility that the *same* rise in temperature should be at one moment followed by an expansion and at another not, as there is a possibility that the same crow may sometimes be black and sometimes white. Rises of temperature at different times are different rises of temperature; it is of course perfectly possible that one may be and another may not be followed by an expansion, but the *same* one cannot occur at two different moments and therefore cannot have different sequents at different times. Hence one difficulty inherent in investigating substances and their properties is ruled out in investigating events and their connexion.

For similar reasons there is no possibility of observing the same event twice, as there is of investigating the same crow twice. In observing events the position is quite parallel to pulling out counters and not putting them back. What is secured artificially in the counter experiment is secured in investigating events by the fact that each event is tied to its moment and ceases to belong to the class of observable events when that moment is past.

So far the inductive observation of events is in a stronger position than that of substances. But here its advantages cease. There is clearly the same impossibility of observing any finite proportion of the whole class, and hence of ascribing any appreciable probability to a general law about its members. There is the same difficulty about observing a 'fair selection' in space. And there is a still more hopeless difficulty about predicting the future even for the next event of the class. For it is perfectly certain that I could not up to now have observed any event which belongs to a moment later than my last observation. Hence the condition of equiprobability breaks down and my observations add nothing to the probability that the next event to be observed will agree with those which I have already observed. With substances, as we saw, it was possible that the next one to be observed had an equal chance of having been observed with any of those which I actually happened to notice. Hence there was a possibility of predicting a few steps ahead if we assume that the substances are not changing their qualities. But this is because substances persist for a time and are not tied to single moments like events.

I conclude then that, neither for substances nor for events, will the principle of probability alone allow us to ascribe a finite probability to general laws by induction by simple enumeration. In the case of substances we can argue a few steps ahead if we can assume a 'fair selection' in space, and can further assume that the substances do not change in the property in question over the time for which we are observing and predicting. For events even this amount of prediction is incapable of logical justification. And the latter fact really invalidates the process for substances. For, if our ground for assuming that the substances will not change their attributes be inductive, it must be an induction about events. The possession of an attribute at each moment of a duration constitutes a class of events, and to argue inductively that there will be no change is to argue from observations on some of the earlier members of this class to the later ones which cannot fall into the class of those which it was equally likely for us to have observed up to the moment at which we stop our observations. It was for this, among other reasons, that I said that the distinction between inductions about substances and inductions about events, though convenient in discussing the subject, was not of ultimate philosophic importance.

Before leaving induction by simple enumeration and passing to the hypothetical method it may be of interest to remark that, in theory, there are two quite different reasons for trying to enlarge the number of our observations as much as possible. (i.) We want to examine as many S's as possible simply in order to increase the proportion of m to n in the fraction $\frac{m+1}{n+1}$. For this purpose it is quite irrelevant whether the observed instances happen under very similar or under very diverse circumstances. It is simply the number that counts. Unfortunately in investigating nature it is of little use to worry ourselves to increase m for this reason, since we know that however much we increase it, it will remain vanishingly small compared with n. (ii.) We want to examine S's under as many different circumstances as possible. This is so as to approximate as nearly as we can to a 'fair selection'. Here it is not the mere number of instances that counts but the number of different circumstances under which the observed instances happen. Unfortunately however well we succeed in this we cannot raise the probability above $\frac{m+1}{n+1}$, we can only ensure that it shall not fall indefinitely below that indefinitely small fraction.

B. *The Hypothetical Method.*—I shall first briefly state the connexion between this and induction by simple enumeration. I shall then consider the logical principles on which the hypothetical method is based and see whether they, without additional assumptions about nature, will suffice to give a finite probability to any suggested law.

Induction by simple enumeration is just a rather special case of the hypothetical method. At the outset of our experiment with the bag we have $n + 1$ equally likely hypotheses as to the constitution of its contents. After the first draw has been made and the counter found to be white one of these hypotheses is definitely refuted (*viz.* that there were no whites present). The others remain possible but no longer equally probable; the probability of each on the new datum can be calculated. After the second draw another one hypothesis is definitely refuted; the remaining $n - 1$ are all possible, but once more their probabilities have been altered in various calculable amounts by the addition of the new datum. The procedure after each draw (assuming that all turn out to be white) is the same; one hypothesis is always refuted; the rest always remain possible, and among these is always the hypothesis that all in the bag are white; and the probabilities of each are increased in various calculable degrees. The special peculiarities of this method are (*a*) that the various hypotheses are known to be mutually exclusive and to exhaust all the possibilities, (*b*) that they deal solely with the question of numbers or ratios, and (*c*) that only two of them, *viz.* the hypothesis that none are white and the hypothesis that all are white are comparable with general laws.

The reasoning of the hypothetical method in its most general form is the following. Let h be the hypothesis; it will consist of one or more propositions. We prove by ordinary deductive reasoning that h implies the propositions $c_1, c_2 \ldots c_n$. Let h/f be the probability of the hypothesis relative to any data that we may have before we start our experiments to verify it. Then we know in general that

$$h.c_1/f = c_1/f \times h/c_1.f = h/f \times c_1/h.f.$$

If h implies c_1 it is clear that c_1/h (and $\therefore c_1/h.f) = 1$.

Hence $$c_1/f \times h/c_1.f = h/f.$$

Whence $$h/c_1.f = \frac{h/f}{c_1/f}.$$

Again $$h.c_1.c_2/f = h.c_1c_2/f = c_1c_2/f \times h/c_1c_2f$$
$$= h/f \times c_1c_2/h.f.$$

But $$c_1c_2/hf = c_1/hf \times c_2/c_1hf$$
$$= c_2/c_1hf.$$

And since h implies c_2 it is clear that c_2/h (and $\therefore c_2/c_1hf)$ $= 1$.

Hence $$h/c_1c_2f = \frac{h/f}{c_1c_2/f}.$$

[1] In general, if h implies $c_1, c_2 \ldots c_n$, we shall have

$$h/c_1c_2 \ldots c_nf = \frac{h/f}{c_1c_2 \ldots c_n/f}.$$

We can learn much from a careful study of this formula. We see that the probability of a hypothesis is increased as we verify its consequences because the initial probability is the numerator of a fraction whose denominator is a product which contains more factors (and $\therefore$, since they are proper fractions, grows *smaller*) the more consequences we deduce and verify.

For $c_1c_2 \ldots c_n/f = c_1/f \times c_2/c_1f \times c_3/c_2c_1f \times \ldots c_n/c_{n-1} \ldots c_1f$. Next we see that it is only by increasing the number of verified consequences which are logically independent of each other that we increase the probability of the hypothesis. For if, *e.g.*, c_{r-1} implies c_r the factor $c_r/c_{r-1} \ldots c_1f = 1$, and so does nothing to reduce the denominator and thus increase the probability of the hypothesis. Again, the more unlikely the consequences were on the original data f which we had before we started to verify the hypothesis the more they increase the probability of the hypothesis if they be found to be true. For this means that the factors like c_1/f are very small, hence that the denominator is small, hence that the final value of $h/c_1c_2 \dots c_n$ is likely to be large. This is the precise amount of truth that there is in the common view that an hypothesis is greatly strengthened by leading to some surprising consequence which is found to be true. The important point is not the psychological surprisingness of the consequence, but is the purely logical fact that *apart from* the hypothesis it was very unlikely to be true, *i.e.* it was neither implied nor rendered probable by anything that we knew when we put the hypothesis forward. Lastly we must notice that the factor h/f, expressing the probability of our hypothesis on the data known before any attempt at verification has been made, is always present in the numerator, *i.e.* as a multiplicative factor. Hence, unless we can be sure that this is not indefinitely small, we cannot be sure that the final probability of the hypothesis will be appreciable.

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[1] The mathematical theory of the probability of hypotheses is treated by Boole in his *Laws of Thought*. The problem in its most general form (where it is not assumed that h *implies* $c_1, c_2 \ldots c_n$, but only that it modifies their probability) has been worked out, but not I think published, by Mr. W. E. Johnson. I take this opportunity of expressing the very great obligations which I am under to Mr. Johnson, obligations which I know are felt by all those who have had the privilege of attending his lectures on advanced logic or discussing logical problems with him. Mr. Johnson, however, must not be held responsible for the views expressed in the present paper.

There is just one thing further to be said about h/f. h may be a complex set of propositions. Suppose we have two alternative hypotheses h_1 and h_2. Suppose $h_1 \equiv p_1p_2 \dots p_m$ and $h_2 \equiv q_1q_2 \dots q_n$, and let $n > m$. Then h_2/f is a product of n factors all fractional and h_1/f is a product of m factors all fractional. There will thus be a tendency for the less complex hypothesis to be more probable intrinsically than the more complex one. But this is only a tendency, not a general rule. The product $\frac{1}{2} \cdot \frac{3}{4} \cdot \frac{5}{6} \cdot \frac{7}{8}$ is greater than $\frac{1}{2} \cdot \frac{1}{3} \cdot \frac{5}{16}$, although the latter contains fewer factors than the former. This tendency, however, is the small amount of logical truth in the common notion that a more complicated hypothesis is less likely to be true than a simpler one.

We are now in a position to see whether the hypothetical method in general is any more capable of giving a finite probability to alleged laws of nature, without some additional premise, than its special case the method of induction by simple enumeration. I shall try to prove that, whilst the hypothetical method has many advantages which fully explain why it is the favourite instrument of all advanced sciences, it yet is insufficient, without some further assumption, to establish reasonably probable laws.

The advantages of the method are obvious enough. (i) The hypotheses of induction by simple enumeration are purely numerical and therefore no consequence can be deduced from them except the probability of getting a certain number of favourable cases in a certain number of experiments. When hypotheses are not limited in this way the most varied consequences can be deduced, and, if verified, they increase the probability of the hypothesis. (ii) If the hypothesis be stated in mathematical form remote and obscure consequences can be deduced with all the certainty of mathematical reasoning. We thus have guidance as to what experiments to try, and powerful confirmation if our experiments succeed. The history of the wave theory of light is full of examples of this fact. (iii) If careful experiments refute some of the consequences of an hypothesis we knew of course from formal logic that the hypothesis cannot, as it stands, be true. But if most of the deduced consequences have been verified we may fairly suspect that there cannot be much wrong with the hypothesis. And the very deductions which have failed to be verified may suggest to us the kind and degree of modification that is necessary. (iv) It is true that in induction by simple enumeration we have the advantage of knowing that our alternative hypotheses are exhaustive and exclusive. But in investigating nature this is of little profit since we also know that their number is indefinitely large. Now, it might be said, in the hypothetical method, although we cannot be sure that we have envisaged all possible alternatives, yet the number of possible laws to explain a given type of phenomena cannot be extremely great, hence the intrinsic probability of none of them will be excessively small if we regard them as all equally probable before attempted verification.

This last argument seems plausible enough at first sight. Yet it is mistaken, and in exposing the mistake we shall see why it is that the hypothetical method by itself will not give an appreciable probability to any suggested law. Why is it that the intrinsic probability of the law that all S is P is vanishingly small in induction by simple enumeration whilst that of any suggested law in the hypothetical method is not, to all appearance, vanishingly small? One reason is that the alternatives taken as intrinsically equally probable are not *in pari materia* in the two methods. In induction by simple enumeration the alternatives are not various possible *laws*, but various possible *proportions*, only two of which, *viz.* 0 °/o and 100 °/o of the S's being P, are laws. In the hypothetical method we have so far assumed that the alternative hypotheses are always laws. This naturally reduces the number of possible alternatives and hence increases the intrinsic probability of each as compared with the alternatives of induction by simple enumeration. But this difference renders comparison between the two methods unfair. If in simple enumeration alternatives other than laws are to be accepted as intrinsically as probable as laws there is no reason why the same assumption should not be made in the hypothetical method. And it is surely evident that the objections which apply to induction by simple enumeration as a sufficient means of establishing a law apply equally to the hypothetical method. All the experiments which have been made up to a given moment to verify an hypothesis can throw no light on the truth of this hypothesis as referring to moments after that at which the last experiment was performed. Now it is certain that an indefinite number of hypotheses could be put forward agreeing in their consequences up to a given moment and diverging after it. Exactly similar remarks apply to space; there can clearly be any number of alternative hypotheses which have the same consequences within a given region of space and different consequences outside it, and no experiments performed wholly within this region can give any ground for deciding between them. I think therefore that we may now claim to have proved our second contention that the degree of belief which we actually attach to the conclusions of well-established inductive arguments cannot be justified by any known principle of probability unless some further premise about the existent world be assumed. What this premise is, whether it can be stated clearly enough to admit of logical criticism, and whether in that event it will survive logical criticism, are extremely difficult questions which I reserve for the second part of this paper. What I have said so far I believe to be fairly certain, what I have yet to say I know to be extremely doubtful.

(*To be continued.*)

II.—THE RIGHTS AND WRONGS OF A PERSON.

(*A Sequel to "What is a Person?" July*, 1917.)

Part II. (Man, Beast, and Mother Earth).

By W. M. Thorburn.

23. God forbid that I should be anything so narrow as a Philanthropist. Every sound-hearted man will try at least to be a Philozoist: not careless also of Mother Earth's vegetable vesture of beauty. The world was not made for Man, but man for the World. He is only one of God's tools, for perfecting the harmonious development of a happy, holy, and beautiful Mother Earth; well balanced in all her forms and forces.[91] The Mid-Victorian outcry against Darwin was the outcome of a shock: not so much to godly piety, as to unconscious Comtism, man-flattering Augustinity, or the boundless and baseless self-conceit of the commonplace canter; intoxicated with Stoic, Coptic, and Punic variations of that vile phrase, the Dignity of Man. The lower a half-educated biped's moral attainment, the more he magnifies the distance between himself and his fourfooted neighbours. And, as both Pascal and Rochefoucauld have remarked, the most vicious and ignorant smattering shallowpate is the slowest of all, to be impressed by the intellectual superiority of his betters, unless it is backed by some patent superiority in physical force. "The higher we soar, the smaller we look to the groundlings who cannot fly": said Nietzsche in *The Dawn of Day* (574). An honest man may be, "the noblest work of God"; as he is certainly one of the rarest: in places like Wales or Muscovy, Chicago or the City of London. But it is not much, to be a mere human being. It is more, to be a Sperm Whale, or a Great Bird of Paradise: far more, to be an Elephant, or a well-bred black and white Collie, untainted with the rufous tint and temper of the Gordon Setter.

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[91] Compare Henry Sidgwick's formula: "The well-being . . . of the whole universe of living things": *Practical Ethics*, 63 (ch. iii., Public Morality, 1897. And F. C. S. Schiller's "Ideal of a harmonious interaction of individual existences": *Riddles of the Sphinx*, XI., 25.

There is a Dignity of Birth, and a Dignity of Function: a Dignity of Age, and a Dignity of Achievement: a Dignity of Learning, a Dignity of Skill, and a Dignity of Character. But the Dignity of Man is a *Chimaera bombinans in vacuo* only a little less absurd than the Dignity of Monkey.

(*b*) In this maudlin age of levelling and overcrowding, it is before all things necessary, to preach the righteousness of inequality and the insignificance of the common bimanous biped. Man the Image of God, forsooth! That is only a piece of Man's vainglorious impudence: a complete contradiction of all the relevant facts. All Archæology converges to prove, what Xenophanes[92] recorded twenty-five centuries ago; that men have always made their gods *in their own images.* The Thracian gods were red-haired and fair-skinned: the Ethiopian black, flat-nosed, and woolly-headed. And had Lions hands, they would make gods with manes and tails. How indeed can there be any image of the Supreme Invisible: Who dwelleth in light inaccessible and full of glory: whom no man hath seen, nor can see? Philo Judaeus, in his *De Mundi Opificio* and *Legum Allegoriae*, denies that Adam was "made in the image of God": as commonly understood. Philo's notion is summed up thus by Dr. James Drummond[93] on page 276 of his second volume: "The Ideal man was a thought generated within the Divine Reason; and the earthly concrete man was an imperfect copy of this heavenly archetype". Philo's understanding of Genesis (in regard to i. 26 and 27; v. 3; and ix. 6), seems to be: that the Hebrew word *Zelem;* translated *Eikōn* in the Septuagint, *Imago* in the Vulgate, and *Image* in English; did not there mean the result of a material copying of God himself, but of an Idea in the mind of God. This Ideal was an archetypal mental pattern of the Genus *Homo*, of which he made material copies, "male and female"; according to Genesis v. 2. The female copy at least could not be a copy of God himself; whom the Hebrews conceived as male or sexless. Just so, the first elephants were material copies of an Image or Idea of the

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[92] Xenophanes: *Fragment*, 6: on p. 41 of Karsten's *Phil. Grace. Vet. Reliquiae.* See also Clement of Alexandria: *Stromateis*, V., 14 (pp. 277 and 285 of his 2nd volume in the Ante-Nicene Library). The Stoics according to Diogenes Laertius (*Zeno*, 72) held that God was a perfect immortal animal, not having the figure of a man: Zeller's *Stoics and Epicureans*, 149 and 346 (in Eng.). For the Egyptian and Babylonian deification of Man, see Sayce: *Religion of Egypt and Babylon*, pp. 37, 41-43, 241, 280-290. "Even the ordinary man contained within him a particle of effluence of the divine essence," p. 241 (Egypt).

[93] Many references are given on pp. 215 and 275-280, in vol. ii. of Drummond's *Philo Judaeus* (1888).

Genus *Elephas*, existing in the Divine imagination. And just so, even the first trees of every Genus (and Species) were material copies of a Celestial Generic or Specific Ideal.[94] Similar opinions are expressed by Moses Maimonides in the first chapter of his *Guide to the Perplexed*. "The Hebrew equivalent of *form* in the ordinary acceptation of the word, *viz.*, the figure and shape of a thing, is *Toär*. The term *Zelem* on the other hand signifies the *specific form* of man, his intellectual perception, and does not refer to his *figure* or *shape*. . . . *Demut* (likeness) . . . denotes agreement with regard to some abstract relation. . . . Man's distinction consists in a property which no other creature on earth possesses: intellectual perception. . . . On this account, . . . he is said to have been made in the form and likeness of the Almighty."[95] But, since Darwin, no open-minded student of science can doubt, that this fancied exclusively human possession is common, in various degrees, to every one of God's sensitive creatures.

24. *L'Anthropolatrie: voilà l'ennemi!* must be the watchword of every God-fearing student of Science and Justice. *Ecrasez l'infâme!* The most effective servants of Satan are the impious imbeciles, who make a dirty little deity out of every lump of animated rubbish, that can be classified under the Genus *Homo* of the Family *Anthropini*. The Western Sentiment of Human Sacrosanctity is not only the most impudent of all Heresies, but the poisonous climax of all Hypocrisy. It has never prevented the fiery immolation of actual or imaginary enemies under the name of Witches or Heretics, nor the wholesale murder and torture wantonly perpetrated under the name of War.[96] Yet a soldier, deco-

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[94] Philo: *Plantatio Noe*, 11.

[95] Again, in ch. 51 of Part III., Maimonides says: "The intellect which emanates from God unto us is the link which joins us to God".

[96] Remember Sherman's "War is Hell": as he and Napoleon made it: though for a century before the French Revolution War had been growing ever milder. As the French General, Comte J. A. H. de Guibert († 1790), cynically deplored in his *Essai General de Tactique*, which so powerfully stimulated the Corsican Genius of Evil: "To-day (1770) the whole of Europe is civilised. Wars have become less cruel. Save in combat no blood is shed; prisoners are respected; towns are no more destroyed; the countryside is no more ravaged. Conquered peoples are only liable to pay some sort of contributions, which are often less heavy than the taxes they pay to their own sovereign." Introduction, § 3, p. 21. The insidious hints of paralysing cruelty in his Preliminary Discourse (pp. 17, 58, 62); though reprobated during his lifetime; were eagerly taken up by the soldiers of the Revolution, systematised by their despot, and thus more or less forced into adoption on the part of his opponents. Finally therefore, his lucrative reversion to barbarity was stereotyped by Clausewitz in his Classic treatise *On War:* especially Book V., ch. 14, §§ 1

rated for shooting a dozen honest Boers, came home to run the risk of being treated as a felon, if he should fire a shot at some incendiary plunderpig in the flames of the London or Bristol Docks. The vogue of this fœtid phantasm has been cunningly converted by greedy Forensic Pharisees, into impunity for the rioter and the robber.[97] It is the subterfuge of every atrocity inflicted on our helpless fellow-vertebrates. And it still prolongs the agony of the incurable, when anodynes or anæsthetics ought to be given (as they were to Mr. Gladstone), with a single eye to the relief of pain. For, Life is to be valued, only as the framework of happiness and usefulness. It is *Sacred*, only so far as likely to contribute materially to the harmonious development of the world, in accordance with the divine purposes gradually unfolded to us, by Science and the right understanding of Scripture. And otherwise, it is worthy of protection, only in so far as it is happy and harmless. For, Being without Well-Being is nothing but a Curse. And the higher the Being, the greater the Curse.[98]

(*b*) Fundamentally, that Sentiment seems to be a metaphysical transformation of the Primitive Ghost-Fright, which still prevents the unreasoning from putting sick or wounded quadrupeds out of their misery;[99] as of old it subjected

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and 4. This chapter may be compared with the 18th chapter (on Subsistence) in Guibert's Second Part. Compare also with Ch. 5 of Part I. in Hamley's *Operations of War.*

[97] Hale: *Pleas of the Crown*, I, 479-489. The "Christian duty" of running away, from a robber whom you could disable or destroy, was invented by Basil (*Ad Amphilochium*, 55, in P.G. XXXII., 795). It was reaffirmed by Ambrose in a didactic work compiled for the clergy only: *De Officiis Ministrorum*, III., 4 (27). As laymen were not expressly exempted, the scope of it was easily misrepresented. Some time in the 17th Century, the Ambrosian duty seems to have been imposed on English laymen, through the fraudulent force of unwarranted analogical extension; though Coke stoutly maintained that an honest man was not bound to retreat before a thief: *Third Institute*, 55. Hale, it seems, is the imp of iniquity, who must be chiefly cursed for this legal infamy. He was a wicked old witchbaiter: destitute of any real love for justice, in spite of his great Whig reputation.

[98] Francis Bacon: *De Augmentis Scientiarum*, VIII., *cap.* 2: vol. i., p. 790 of *Works* in Spedding's edition: "Quod ipsum *Esse* sejunctum a *Bene Esse.* maledictionis loco sit, et quo grandius sit *Esse*, eo major sit maledictio". Life is nothing; and Death is nothing; and Pleasure is next to nothing. But Freedom from Pain is nearly everything: the necessary substratum of all Well-being.

[99] Philo Judaeus denounced Infanticide by Exposure, as the worst kind of murder; horrifying by the probability of agony: *De Specialibus Legibus*, 6. In September, 1910, Sir Gerard Lowther wrote from the Constantinople Embassy, to inform the R.S.P.C.A., that thousands of dogs, who had been dying of hunger and thirst on the island of Oxia, were now

superfluous infants to the unlimited horrors of exposure, and denied to them the mercy of speedy suffocation. But it is coloured with hazy delusions about the Dignity of Man, drawn by Tertullian from the Stoic Pantheism,[100] which John Scotus Erigena and Averroes afterwards handed down to the philosophers of the Renaissance, the *Aufklärung*, and the Revolution. And among Christians, it has been greatly intensified by the lurid fancies of Augustinian Eschatology, nurtured, if not begotten, in an atmosphere of Carthaginian Cruelty. We may indeed affirm, that the current cant about Self-Murder was foisted on the Church in the Fourth and Fifth Centuries, by North African Moloch-stokers and self-torturing Levantine Fakirs. It began as a Carthaginian excrescence on Christian Tradition, and has always been devoid of the slightest Oecumenical authority.

(*c*) By Anthropolatry, however, we must understand ; not the ennobling practice of Hero-Worship: in all Ages the ladder of true godliness. But especially that modern deification of the typical average anthropine biped, which is only a roundabout way for every fool-brute to worship himself: in short the Apotheosis of the Cockney Costermonger. Extreme examples of the North American *Homini-Cultus* are easily accessible to the English reader in recent issues of the *Hibbert Journal.* Prof. Overstreet (of the New York City College) has followed up his *Democratic Conception of God* (Jan. 1913) with *God as the Common Will* (Oct. 1914). In the former, Rousseau's cheating cloud-word (the Common Will), supplemented with the Professor's own *Ober-Hegelisch* "Self-modification of mass-life," led us up to: "The God that is ourselves" (p. 410). We were told that: "(a) Society, democratic from end to end, can brook no such radical class-distinction, as that between a supreme being favoured with eternal and absolute perfection, and the mass of beings doomed to the lower ways of imperfect struggle". From the later article we learn, that: "Religious devotion (in all men) . . . is a loyalty to the God-life

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being mercifully destroyed by poison: the Turks having been led to see the wickedness of the old practice of marooning. Otherwise the Turks, (as travellers in the Levant have usually noticed), have always been kinder than Christians to "dumb" animals. See Montaigne's *Essays*, vol. ii., ch. 11 (Of Crueltie, near end). Also Townshend's *Military Consul in Turkey* (1909), 145-147. And Brailsford's *Macedonia* (1906), 109. On the Psychology of the superstition see Farnell's *Higher Aspects of Greek Religion*, 89.

[100] "Pantheism is self-deification": Hodge's *Systematic Theology*, I., 301. "Pantheism is, for all religious purposes, identical with Atheism": Dean Mansel on Kant, in *Letters, Lectures, and Reviews*, p. 181. See also his *Limits of Religious Thought*, Lecture II., p. 54. For Tertullian's Stoicism, see Harnack's *History of Dogma*, vol. v., p. 21, in English.

that is in them" (p. 174); and he concludes by assuring the Boy and Girl Tyrants of the Great Manhattan Wolf-pack (on the authority of E. D. Starbuck), that: "all are the incarnation of the spirit of eternal beauty and worth and truth"! This orgy of anthropine self-laudation overtops indeed even Anselm's *Cur Deus Homo*, as the Culminating Impudence of Man.[101]

25. The ultimate value of any animal depends very largely on its rarity. A man is only one of 1,600,000,000: the commonest, and individually the most easily spared, of all the larger mammals. "The life of a man is of no greater importance to the universe than that of an oyster. . . . An insect is able to destroy this mighty being, whose life is of such importance. Is it an absurdity, to suppose that human prudence may lawfully dispose of what depends on such insignificant causes?"[102] Every square-mouthed rhinoceros, butchered on the banks of the White Nile, to make a bloody British holiday for Roosevelt or Clodius Secundus, was (to say the least) worth his weight in members of the House of Commons. And it would be really shameful; not to take a safe shot at any pothunter or trophy-hunter, black or white, in order to save one of the fast-vanishing family of Giraffes. At no period of the Earth's history; even when men were fewest, and elephants most abundant; could it be said that one typical talking biped was of more value to the divine world-purpose, than one typical fourfooted tusker. And it could never be aught but a foul sin, to murder a magnificent and magnanimous quadruped, for the games and gewgaws of some superfluous gambling biped. From a purely moral point of view indeed, the typical Old English curly blunt-nosed sheep-dog is perhaps the highest of vertebrate varieties. "There are many things more divine than man;" said Aristotle;[103] thinking of the sun in his glory, and the stars in their courses. But he had no need to look so far from the Akropolis of Athens. Men may come, and men *must* go; but there is no

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[101] Much that is useful, as an antidote to this impious nebulous nonsense, will be found in Sir William Ramsay's long (and loosely-named) Introduction to his *Cities of St. Paul*: "Paulinism in the Græco-Roman World".

[102] Hume's *Essay on Suicide* (middle). Compare Montesquieu: *Lettres Persanes*, 76: "All these notions have no other springs but our own pride; we do not see our own Insignificance". Also Sir Alfred Lyall: *Life* by Durand, 109: "We overrate altogether the importance of the human race, its doings and its destinies".

[103] *N. Ethics*, VI, 7. Compare Plotinus: *Ennead* II., c. 9 (Against the Gnostics), ss. 5 and 13: "Nor again, is it fit to assert that the souls of the vilest men are immortal and divine," § 5.

honest reason why a tower or a temple, a family-home or a family-estate, should not go on for ever. The clearest note of the highest national culture is the persistent connection of families with localities. A forest may live as long as a mountain, and a single oak-tree may feast the eyes of forty anthropine generations. Verona and the Vatican, in the divine scheme of things, outweigh all existing ignoble Italians; and Philae with its palms was worth far more, than all the Fellahin who ever scratched the mud of the Delta. Our great English Cathedrals, or our great British Museum, would be cheaply saved at the cost of half the British population.[104] For, after all, it would only be an anticipation. Everybody must die sooner or later. And the national loss, if it were a loss, could be repaired in half a century, even without a Franconian Dispensation.[105] The anthropine stock would be all the same to our grandchildren in quantity, and might be very much better in quality.

(*b*) There is a Golden Mean in the multiplication of *Human Beings*, as of everything else. No pluvial deluge could ever do so much damage as the present "devastating flood of (unhappy) babies".[106] We may easily have too many men and women, even for their own comfort: not to mention other and higher aspects of divine policy. We have already far too many in certain regions, even if all were just men needing no repentance. There is need, and there must be room, for some specimens of every flowering plant, and every vertebrate animal.[107] But taking her all round, our good old Mother may already have men enough for all desirable developments. At least a third of the solid surface (in every quarter of the globe) ought always to be kept as waste and woodland, for regulation of rainfall, and other purposes moral as well as material. The magnanimous man must be able to retreat from the commonplace:[108] must have easy access to refreshing solitude, in soothing and elevating communion with things older and greater than humankind: with mountain, moor, and forest: the magic of running water,[109] and the majesty of the ocean-tide. What sort of man would care to live in a crowded smoky world, everywhere like the Potteries and the Hundred of Salford: the West Riding Coalfield and the Lower Ward of Lanarkshire? Poverty might be no great hardship to a philosopher in a shepherd's hut, or a forester's lodge; especially if he had some access to the books of a sympathetic employer. But he would suffer hell upon earth, among the curious malicious blockheads of a mining village.

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[104] The worse half of course.

[105] During the Thirty Years War (1618-48), Franconia (like most of Middle Germany) lost so many men by battle and murder, that only one man was left for four or five women. In 1650, therefore, the Prince-Archbishop of Mainz and the Estates of the Franconian Circle (with the Pope's permission) allowed every priest to marry, and every layman to have two wives at once: Menzel's *History of Germany*, XVIII., c. 211. In Moravia about the same time, there was similar legislation: according to the nameless writer on M. in the *Enc. Brit.*

[106] The phrase must, I believe, be credited to the mellowed agitator, who now (1914) supervises our Local Government.

[107] See C. G. Schilling: *With Flashlight and Rifle* (in Africa), pp. 1-15 (On the Tragedy of Civilisation). In his Introduction to that work, Sir H. H. Johnston admirably says: "The world will become very uninteresting, if man and his few domestic animals, together with the rat, the mouse, and the sparrow, are its only inhabitants among the vertebrates. . . . Aesthetically, the egret, toucan, bird of Paradise, grebe, sable, chinchilla, and furseal are as important as the well-dressed woman. The viper, lion, tiger, crocodile, wolf, vulture, and rhinoceros have all their places to fill in our world-picture. They are amazingly interesting, and therefore their destruction should only be carried out to the degree of keeping them in their proper sphere": p. xvi. On p. xviii. he says:

26. One may value the Earth's green mantle far above the mining, manufacturing, and stock-jobbing millions who deface and defile it; even though he cannot follow Fichte in ascribing a Soul to every Plant. Fichte[110] indeed was not singular in entertaining such a notion: fantastic as it may seem. Plutarch[111] has told us that: "Plato and Empedocles believe that plants are animals, and are endowed with souls". The Manichaean Elect dared not even

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"A nice balance must be struck". Much more to the same enlightened effect will be found in his Article in the *Nineteenth Century* of September, 1913: on *Fauna, Flora, and Scenery*. See also J. S. Mill's noble protest against the squalid disfigurement of the Earth, for the mere multiplication of men and money: the sole idea of the "Manchester School" of politicians: "A stationary state of capital and population implies no stationary state of human improvement": *Political Economy*, IV., 6 (2).

[108] "Whose word shall some day rise and crash,
Within him much doth shroud,
And who would be the lightning-flash,
Must long remain—a cloud."

Nietzsche: *Poems*, p. 243 of the translation by John Gray, appended to Tille's edition of the *Genealogy of Morals*.

[109] Henley's *Book of Verses*, p. 95: Life and Death (Echoes), XXXII.: "Oh, the magic of running water". Scott speaks of the traditional magic in *The Lay of the Last Minstrel*, III., 13: "The running stream dissolved the spell".

[110] Fichte: *Science of Rights*: Appendix XIV. and XVII., pp. 502-505 in English Translation by Kroeger and Harris.

[111] Plutarch: *Placita Philosophorum*, V., 26: referring to Plato's *Timaeus*, 77.

pluck a fruit or break a twig.[112] And the Franciscan *Summa Astensis* (A.D. 1317) quaintly says that some query; whether the Divine Precept, *Non Occides*, forbids us to kill: "plantas et alia bruta".[113] Montaigne dallies with similar speculations at the end of his Essay on Crueltie (II., 11). Insectivorous, and other Sensitive Plants, such as *Mimosa*, *Oxalis*, and *Impatiens*, seem to protest against the assumed radical distinctions between animal and vegetable: which are certainly not easy to perceive in the lowest grades of both kingdoms. Sir James Simpson first narcotized a Mimosa shrub. Verworn has recorded similar experiments, and found *Mimosa Pudica* responsive to electric stimulation.[114] Nobody who has ever walked through a field of the creeping sensitive *Mimosa Natans*, so common in the Godāvari Delta, will ever forget the uncanny sight of the rippling sea of leaves, folding up two or three yards in advance of his footsteps.

(*b*) J. E. Taylor has made many readers open their eyes over his enthusiastic *Sagacity and Morality of Plants.* He does not however mention an example of the former quality, which must have been noticed by many observers of thorny trees in arid regions; though I have not come across any description of it in print. The fennel-scented Woodapple (*Feronia Elephantum*), and several of the spiny Mimosas and Acacias so common in the Dekkan, look for many years like prostrate trailing plants. They spread themselves close to the ground, to get the greatest possible quantity of dew, and to keep the sun from the soil about their tender roots. When their taproots have got far enough down, to resist an ordinary hot season at its height, they shoot up a central stem at the rate of a yard a year. And in the very driest places, some trees, like the conspicuous Umbrella-Babul, repeat the lateral dew-catching growth at the top; gradually dropping the lower branches which demand more nourishment than they help to supply. As to the scope of our divine duties in regard to the perfection of the world: what Nietzsche might have called the *Welt-Hellenismus*: attention is well deserved by G. M. Gould's *Meaning and Method of Life: a Search for Religion in Biology.* "The clearest evidence of the common duty of humanity towards the Plant-World consists in the sin of deforestation," . . . destroying

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[112] Harnack: *History of Dogma*, vol. iii., p. 327 (in English): Appendix on the Manichees.

[113] *Summa Astensis* (1317): Book I., Title 25.

[114] Verworn: *General Physiology*, pp. 227, 374, 380, and 426 (in English); chapters iii. (3 C) and v (2 A). Simpson: *Anaesthesia and Hospitalism*, p. 256. L. Jost: *Physiology of Plants*, Lecture 40, p. 516: see also Lecture 41 (pp. 521 and 528) on allied topics.

"the exquisite balance established by *Biologos:*" [115] his name for a Life-Creator, who is not Omnipotent, but something more than a Gnostic *Demiourgos.*

(*c*) The moneygrubbing foulers of fresh air and running water may howl at this, as the Chocolate Press lately howled at Sir John Ramsden of Byrom: [116] "Are not men more than trees or trout"? I fling back an unfaltering, "No". I am the friend of many a great and ancient tree; not to speak of many a noble stretch of woodland; which I would save without the slightest compunction, by throwing bombs into a Vandal horde of Hooleys and Hooligans. An average man may indeed be of more potential value to the world than an average trout; but not of more value than all trout, or even all the trout in a single river. The world would not be complete without trout,[117] and there is no trout who is not good for something. But there are many men who are a great deal less than good-for-nothing: whose existence is a positive evil, a pure curse to the rest of God's sensitive creatures. And the world may have too much even of a good thing.[118] An exclusive vertebrate population of men would be worse for the Earth, than an exclusive population of Saurians. The Saurians would at least leave it green.

27. "Just as Copernicus smote the conceited belief out of humankind, that their kingdom, the Earth, was the centre of the Universe; so Darwin has put an end to their assumption, that they occupy an exceptional position on our planet." [119] The Mighty Drama of Mankind dwindles in true

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[115] Chapter xiii. (Ethics), p. 257. This very powerful and constructive work by a New York Physician is almost unknown in Europe; perhaps because it was damned with faint praise by the platitudinous Platonist Royce, in the *International Journal of Ethics* of October, 1893.

[116] See the *Times* of 18th March, 1913.

[117] It may be as well, to anticipate the snarling Democrat, by saying that I am not an Angler, nor an owner of any angling right.

[118] "And God fulfills himself in many ways,
Lest one good custom should corrupt the world."
—Tennyson: *Morte D'Arthur.*

[119] Conrad Guenther: *Darwinism and the Problems of Life*, ch. ii., p. 79. Mark Pattison in 1884 deplored the revival in Oxford of: "An *a priori* philosophy, which under various disguises aimed at exempting Man from the order of nature, and erecting him into a unique being": *Memoirs*, 242-243. But Dean Inge of St. Paul's in 1912 was not afraid to say: "We can no longer look upon our race as the one important part of God's Creation, nor upon our earth as the centre of the Universe": *The Church and the Age*, 25. See Darwin's *Descent of Man*, vol. i., pp. 10, 105-107, 124-126, and 155-157; for the intelligence and virtue of some baboons. "Baboons have a language": says that careful recent observer, C. G. Schilling: in *Flashlight and Rifle*, II., 559. Huxley says:

perspective, to a side-show on one of the smaller satellites of a second-rate star. How sickening it is, to any one with the smallest tincture of the true scientific spirit, to read or hear the current cant about the mystery of that mighty and majestic creature, Man! The biggest and strongest British Workman, our local avatār of democratic divinity, is not half so mighty as a tiger, nor half so majestic as a bison. And there is still exactly the same mystery about the birth of a bull-pup and the birth of a baby. We know merely that Biology has thrown some new light on Hegel's paradoxical recension of Herakleitus. Life is Change: not a *Being*, but a restless *Becoming*. All life is mysterious, but all things living are pretty certainly Highland Cousins: from the Protozoa up to the President of the Royal Society. As the life-history of the human embryo unrolls a summary of our race-progress, from very lowly beginnings through the common ancestor of men and monkeys; so are the ethics of schoolboy, poacher, and Limehouse Liberal, the survival or recrudescence of an aboriginal Thief-Morality. At the very outset of Butler's *Analogy*,[120] we find the candid admission, that there are nearly the same reasons for believing that all animals have "immortal souls," as for believing merely that all human beings are so endowed. The "Primitive Instinct" of Mankind, whatever may be its worth, points in the same

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in *Man's Place in Nature*, 142: "The difference in weight of brain between the highest and the lowest man is far greater, relatively and absolutely, than that between the lowest man and the highest ape". And on p. 143: "The cerebral differences of man and apes are not of more than generic value; his Family-Distinction (*Anthropini*) resting chiefly on his dentition, his pelvis, and his lower limbs". Metschnikoff says: *Nature of Man*, ch. v., p. 81; that the main differences are in the reproductive organs.

[120] Butler's Analogy, I., ch. i., § 21. As to the Egyptian origin of the theory of Natural Immortality, see Herodotus: *History*, II., § 123: and Sayce's *Religion of Egypt*, Lecture III. John Wesley inclined to a belief in "Animal" Immortality: Southey's *Life of Wesley*, ch. 20 (near end). So did the Seventh Earl of Shaftesbury. See his letter to Miss F. P. Cobbe, in her Autobiography, p. 573. And so did William James of Harvard: as appears on p. 69 of his Lecture on *Human Immortality*. Ruskin wrote to Mrs. Talbot, regarding a cat who died in saving the last of four kittens from a burning theatre: "That cat is blessed. I hope to meet her in heaven": *Works* (Library Edition), vol. 34, p. 723. Luther said: "There will be little dogs in heaven": *Table Talk* (on the Resurrection), no. 797 in Hazlitt's English edition. For a truly Humane Philosophy based on exact science, read *The New Ethics*, and *The Universal Kinship*, by the late J. Howard Moore of Chicago; which have recently been published in London. There is also an excellent abridgement of the second work, by the English Philozoist, Ernest Bell, under the title of *The Whole World Kin*.

direction. Savages fear the ghost of a hunted tiger, not less than the ghost of a murdered enemy.

(*b*) The orthodox are now, however, permitted to hold, that Life after Death is the special gift of God,[121] not the general heritage of Man. Worry no more about your own soul, or the soul of your neighbour. God will look after His chosen; and kindly extinguish the rest, after they have suffered their proportionate punishment: if they have been bad enough to deserve a resurrection. In all grades of the animal kingdom, many are called into life, but few are chosen for survival; and fewer still for elevation to a higher type. Even if it were possible, there would be no more reason for providing all men with equal opportunities of "realising themselves," than for trying to ensure that every caterpillar shall become a moth or a butterfly. A superfluous man is a far greater evil than ten thousand superfluous moths. What the world needs, is not More Men, but Better Men. Better, not in the sense of being more highly "educated," but in the sense of being better fitted for, and better contented with, the various anthropine grades and functions; necessary for the structure of a stable social pyramid, and for the working of a perfect world-machine. A world of University-Graduates would be little better than a world of steeplejacks or tightrope-dancers. Commonplace persons ought to be satisfied with the common places of the world. The Boers are right in thinking that a Kaffir at College is like a donkey at a dinner-table: useful matter very much out of place.

28. As Mr. Fuller of Harvard has forcibly shown, in his recent illuminating *Problem of Evil in Plotinus* (Introduction, 3-7), nobody can "realise himself," without interfering

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[121] Gladstone's edition of Bishop Butler's *Works*, III., 260. Sir G. G. Stokes on *Conditional Immortality:* quoting Irenæus (*Against Heresies*, II., 34, § 2); and Justin Martyr (*Dialogue with Trypho*, 5 and 6). Locke: *Reasonableness of Christianity*, § 1. Whately: *Peculiarities of Christianity*, I., § 11; and *Lectures on a Future State*. Edward White's comprehensive and cogent *Life in Christ*. Samuel Minton, on the title-page of his answer to Canon Liddon ("*Unworthy of Eternal Life*"), quotes from Coleridge (without a reference): "I am confident that the doctrine (of Conditional Immortality) would be a far stronger motive than the present: for, no man will believe eternal misery of himself, but millions would admit, that, if they did not amend their lives, they would be undeserving of living for ever." Emmanuel Deutsch declared in his famous Article on the *Talmud:* "There is no everlasting damnation according to the Talmud. There is only temporary punishment, even for the worst of sinners": *Remains*, p. 53; or *Quarterly Review* of Oct., 1867, p. 459. E. White (on p. 222 of *Life in Christ*) quotes to the same effect from Moses Maimonides.

with the similar self-evolution of other sentient beings. "The moral is no less *red in tooth and claw* than the natural world." If there were only one man on this globe, Time-limits and "Cosmic Friction" would be too strong for him. "He would have to choose among a variety of possible purposes and satisfactions." For: "more interests exist [even in one centre of sensation] than can coexist in harmony". And, "some part of the ideal needs to be butchered": said William James in his *Will to Believe* (202). Excellence and Equality are mutually exclusive. Equality is only another name for Stagnation; and Stagnation is only the prelude to Degeneration and Putrefaction. Variety is Life, and the Joy of Life. The drab dead level is the greedy grave of all that is great and good. Upward evolution is one long-drawn illustration of the Maxim: Quality before Quantity. The sound Aquinian principle: *Imperfectiora sunt propter perfectiora;* II-II, Q. 64, A. 1: has a much wider scope than the Pre-Darwinian Thomas was capable of conceiving. Differentiation of higher from lower is the fundamental condition of all natural progress; even as classification is the necessary framework of all scientific knowledge and practice. Just so, in human society, progress is the conscious cultivation, and justice the reasoned recognition of multiform inequality. In the Science and Art of Adjudication; multiform classification, minute gradation, and Proportionate application, are the factors and vectors of all right dealing with Persons as well as Things.

(*b*) Equality is not Equity: not even English Equity. The contradictory formula in common use is a truncated and misleading version of the real principle: just like the older maxim, *Exceptio probat regulam* (*in casibus non exceptis*), explained in Note 71 *supra*. The cases cited in the Textbooks show that, "circumstances being substantially equal," must be understood as part of the abbreviated formula: Equality is Equity. So understood, the maxim is a simple deduction, obviously implied in the wider Aristotelian postulate: Proportion is Justice.[122] Indeed, Eady, L.J., says, distinctly (in Lord Halsbury's *Laws of England*, XIII., 69), that: "Equality in this connexion does not mean literal equality, but proportionate equality". This meaning is particularly clear in the Equitable presumption against joint-tenancy, which involves literal equality; and in favour of tenancy-in-common, which allows of unequal shares: as in the case of unequal contributors to a fund for purchase.[123] Among Greeks and Romans, *Aequitas* or *Epieikeia* signified: the restoration of a balance (or *status quo ante*) disturbed by force, fraud, or the fatuous application of a general legal rule: not interference with prescriptive possession, or disregard of natural differences resulting from natural growth (either physical or economic). The Process of *Restitutio in integrum* was the highest expression of Praetorian Equity.

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[122] Compare Martineau: *Types of Ethical Theory*, Part II., B. 1, ch. 6, § 11: "What then is this love of Justice? The love of *proportionate treatment* of men and their character according to their worth." In regard to Aristotle on Justice, Equality, and Proportion, refer to *What is a Person* (MIND, July, 1817), § 13 (*c*).

29. "Man is a bridge, and not a goal."[124] Notwithstanding the holy horror of Professor James Ward,[125] and Sir Oliver Lodge, it is just and necessary, that some men should rise on stepping-stones of other men. All the analogies of Nature[126] are against their crowd-cavil; and all the lessons of History. The Lower Man was made to serve the Higher Man, as clearly as collie-dogs were made to serve shepherds. In no other way, than some degree of involuntary human subservience (under whatever shape or name), can the higher types of men come into existence or secure perpetuation. Three generations of moderate leisure may be needed to make a family gentle. But one generation of rough work in coarse company has often been enough to unmake it. Cattle and horses cannot lift men, or keep men, very far out of the ruts of barbarous equality. The pyramid is the only stable form of elevated structure, in which a civilised nation can be built. Savage sterility must ever be the consequence of acting on Kant's Practical Imperative: Treat a man always as an End, never as a Mean.[127] Subservience of other men, preferably of the present lower races of men, whether by way of conquest, legislation, or economic compulsion, is essential to the development of refined wisdom and high-minded goodness; and to every considerable achievement in Art, Literature, and Science. Briefly, you cannot have culture without respectful and obedient servants: enjoying a

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[123] See *Lake v. Gibson* (1729), in White and Tudor's *Leading Cases in Equity*, for a full discussion.

[124] Nietzsche: *Zarathustra*, 56 (3), p. 241.

[125] Ward's *Realm of Ends* (2nd edn.), p. 451. Sir O. Lodge sneered at Nietzsche in the same way, in a letter to *The Times* about twelve years ago: probably not for the first time.

[126] You cannot raise a mound without somewhere scooping a hollow. And a wide level must always be a low level. For, the total quantity of matter cannot be increased; and it cannot even occupy a greater space, without undergoing a gaseous degeneration.

[127] Kant: *Metaphysic of Ethics*, II., p. 42, in Semple's Translation; p. 47 in Abbott's.

supercanine happiness in faithful and cheerful subordination to anthropines more capable of high development.

(*b*) The greatest genius of Historical Jurisprudence concurs with the greatest genius of Semitic Learning,[128] in declaring that: "all civilisation is the work of aristocracies": that is, of races, classes, or families, born and bred in command of human services. "The Greek view of life:" says Gomperz:[129] "was at all times aristocratic." "For to me," said Herakleitos,[130] "one is (more than) myriads if he be the best." And, "History will continue to be a sound aristocrat": as D. F. Strauss[131] wrote in his mellow maturity. In the sober words of the Great Expounder of Evolution: "The presence of a body of well-instructed men, who have not to labour for their daily bread, is important to a degree which cannot be over-estimated; as all high intellectual work is carried on by them, and on such work, material progress of all kinds mainly depends, not to mention other and higher advantages".[132] No flimsier bubble was ever blown, even at a Burns Festival, than Lord Rosebery's oracle at Ayr in 1910: "Poverty produces masterpieces, and wealth smothers". It is only exceptionally true of mere Literature; and is quite untrue of History, Philosophy, and every kind of Science.

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[128] Renan: *Caliban*, IV., 4; and V., 1. Maine: *Popular Government*, p. 42. Germans, I admit, would put Savigny or Von Jhering before Sir Henry Maine: and Frenchmen, Fustel de Coulanges. But none of these was a Democrat. Renan says elsewhere; (*On Channing*, near end): "The loftiness of a civilisation is usually in the inverse ratio of the number of those who share it. Intellectual culture begins to cease, at the moment when it is anxious to spread. The crowd pouring into cultivated society almost always depresses its level."

[129] Gomperz: *Greek Thinkers*, vol. iii., p. 417.

[130] Fragment 113 in the *Reliquiae* of Herakleitus, edited by Bywater (1877), and well translated by Dr. Patrick of Iowa (1889).

[131] D. F. Strauss: *The Old Faith and the New*, § 80, p. 327. The general principle has been well expounded by Paul Elmer More: *Aristocracy and Justice* (1915). Mallock's cogent *Aristocracy and Evolution* deals with the eminence of individuals rather than classes. Compare Emile Faguet: *The Cult of Incompetence*. And A. Christensen: *Politics and Crowd-Morality*. A similar contention runs through Le Bon's *Psychology of Peoples*: especially I., ch. 4; and IV., ch. 3. "Fquality carries inferiority in its wake; it is the dull oppressive dream of vulgar mediocrities," p. 200. "The inevitable effect of civilisation is to differentiate individuals and races," p. 232. "The initiation of all wise and noble things comes, and must come, from individuals": said J. S. Mill in the noble Third Chapter (On Individuality) of his masterpiece, *On Liberty*, p. 119.

[132] Darwin: *Descent of Man*, Part I., ch. v., pp. 207-208 in vol. i. of the enlarged second edition (1888). Compare Aristotle: *Metaphysica*, I, ch. 1 (p. 981*b*, l. 20): "The sciences . . . were discovered, and first in the places where men first began to have leisure".

Wealth, in moderation, does really foster intelligence and virtue;[133] when it does not fall into the unfettered hands of the immature. "Refinement is only possible where leisure is possible."[134] We might have had no Milton, no Gibbon, and no Bentham, if their fathers had not been able to free them from sordid cares. Science is the fruit of leisure, as Nietzsche continually insisted. And Genius can do little but snatches of lyric poetry, without visible tools to work with, and ample materials to work upon.

(*c*) Men of Genius, whatever their origin, are seldom overlooked in an aristarchian community;[135] and only in such a state of society, is there a possibility for them to follow Wordsworth's ideal of plain living and high thinking, in Aristotle's "noble leisure". What could Priestley have done, without the resources of Lord Shelburne? Or Copernicus at Frauenburg, without the patronage of his uncle, the Prince-Bishop of Ermeland? Or Kepler, without the accumulation of astronomical facts and figures by the Danish nobleman Tycho Brahe? Or Joseph Scaliger, the Prince of Scholars and Grand Reconstructor of Ancient Chronology, without his long generous courteous protection by the Huguenot House of La Roche-Pozay? Laplace was the son of a peasant-farmer, but was very soon taken up by powerful patrons, and had enjoyed many years of comfort before his best work was begun. The genius of Lamarck, like Hume a gentleman of long descent, was (like Hume's) greatly fettered for many years by his poverty; and might have remained ineffective but for the aid of Count Buffon. Cavendish, the Father of Chemistry,[136] was the wealthy grandson of the second Duke of Devonshire; and Boyle, the Grandfather, was the well-endowed son of the first Earl of Cork. Lyell and Darwin, the two most effective revolutionary minds of the Nineteenth Century, were easy-living country gentlemen. And Newton's patrimony would have sufficed for his entire devotion to high thinking, even without the resources of Cambridge. Alexander did less for the world by imposing Hellenism on Egypt and Western Asia, than by securing freedom of speech and the sinews of research to Aristotle; the Great Father of all Pragmatism; and the one man who has truly and effectually: "taken all knowledge to be his province".[137]

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[133] O. W. Holmes in his sanest period framed a social scale of Religion and Virtue; in which he placed first "the comfortably rich," and then "the decently comfortable". The very poor, he said, were apt to be immoral, and "the very rich to be irreligious": *The Professor at the Breakfast Table*, V., near the end.

[134] W. Bagehot: *Physics and Politics*, p. 73. Ladies and gentlemen are not made by "rich table and soft bed," fine raiment and elegant equipage; but by the habitual command of intelligent service.

[135] Burns himself had no excuse for complaint. The Nobles and Gentles of Scotland subscribed a thousand guineas for the second edition of his Poems, and treated him as a man of distinction. But they soon grew sick of aiding and entertaining a wasteful arrogant rake, who responded with scurrilous ingratitude. Many other men of genius or practical power got a friendly help to fame, before Britain was cursed with compulsory education at other people's expense. We have now had free (or nearly free) general instruction for half-a-century. And where is the man of genius who has come out of a rate-supported school? Or the man of broad and massive mind, who has made any conspicuous contribution to the happiness or enlightenment of the world? On the other hand, our indispensable good cobblers and good carpenters are locally almost as scarce as good cooks, because every bouncing Board-school Brat sighs for a soft superfluous job, as Labour Leader and eventually Cabinet Minister.

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[136] Sir W. Ramsay, K.C.B.: *Essays Biographical and Chemical*, p. 41.

[137] And we have to thank the Macedonian Conqueror for the spacious Athenian garden, where Aristotle trained Theophrastus to become the Father of Botany.

III.—WHAT FORMAL LOGIC IS ABOUT.

By F. C. S. Schiller.

'What *is* Formal Logic about?' the intelligent reader may well repeat after perusing Dr. Arthur Mitchell's article with this title in No. 104. And the logician may well exclaim, 'If this is what Formal Logic is about, save me from my friends! If it is true that "the state of logical matter and method has always been confusion," that "logic is indeed the most ill-conceived, disorderly—in short illogical—of the sciences" (p. 431), and that its "Law of Identity" is composed of "absurd tautologies" (p. 440), is not the confusion worse confounded by such a defence?' Nevertheless it ought to be gratefully recognised by the recent critics of the logical tradition that Dr. Mitchell's paper is the sole systematic, serious, and sustained attempt there has been for many years to explain the nature and to uphold the scientific status of Logic against modern objections.

It is therefore as a genuine contribution to the question about the meaning of Logic that I wish to comment on the essential parts of Dr. Mitchell's article. I propose to show (I.) that Dr. Mitchell is a complete and utter *Formalist* in the derogatory sense I have endeavoured to attach to this term, (II.) that though he professes to recognise the problem of *Meaning*, which I regard as the central crux for Formal Logic, he does not understand what I mean by 'meaning,' and so neither solves nor even faces my problem, (III.) that the meaning *he* gives to meaning is untenable, and leaves Formal Logic just as 'meaningless' as before, and (IV.) that the notion of Logic he finally arrives at would give Logic a veto on the progress of knowledge and would more than justify the harshest things that have been said about this alleged science.

I.

The readers of my *Formal Logic* will possibly remember that the single source to which I traced all the failures, obscurities, and incoherences in the traditional 'logic' was its

'Formalism'. By this I meant that in consequence of its injudicious attempt to consider the 'form' of reasoning in abstraction from its 'matter' it had been compelled to abstract from meaning altogether, and to make itself a *literally meaningless* science. The first step to be taken in reaching the standpoint of Formal Logic was, I showed, to dismiss the judgment from logic by taking it out of its context in actual thinking and reducing it to a 'proposition,' capable of preserving an identical (*i.e.*, verbal) form irrespective of the time, place, and circumstances of its use, and the purpose and personality of its user. By this fatal abstraction the *meaning of the words* ('dictionary-meaning') was substituted for the *meaning of the man* who made the judgment. This substitution had the apparent advantage that the meaning of the words is permanent and relatively stable, and should be interpreted as a recognition of the truth that it is in consequence of this stability that the words can serve the purpose of conveying the personal meaning which employs them. But it is tempting to construe the words as a form with a *fixed* meaning, which is independent of its use or application, and to this temptation Formalism yields. The form can then be made to exhibit certain formal characters which it can be alleged to preserve throughout, irrespective of its use. These formal characters will then validate the abstraction from personal meaning, and may be made the basis of a special science, Formal Logic, which will naturally claim to be of so fundamental a character as to condition and control all the other sciences. The Formal Logician can then boast that he is dealing with 'the science in the sciences' in the words of the Scholastic[1] definition of logic which Dr. Mitchell, repeatedly (pp. 430, 435) but incorrectly, attributes to Aristotle, establish himself in a position of superior dignity, and save his face.

It was my aim to show that this whole line of reasoning was entirely mistaken and utterly illusory. Accordingly I insisted that the moment the meaning of a judgment ceased to be personal, so soon as the words were severed from the occasion of the judgment, real (actual) meaning was destroyed, and logic was reduced to futile speculation about potential meaning. The forms became (unmeaning) 'forms-for-meaning,' and infinitely 'ambiguous'. Moreover the vital distinction between truth and error was lost, because as a mere matter of form there could be *no* 'false' propositions. Every proposition formally claimed to be 'true,' and had therefore to be treated as true, if it was 'extra-logical to go behind the form. But inasmuch as it was notorious that errors existed and fortunate that they and other false truth-claims might be found out, the result of this paradox was to generate the notion of 'formal validity,' and to separate it from that of 'truth'. Accordingly, 'validity' might be possessed by 'judgments' (propositions) that were actually (materially) false. Henceforth the notion of 'validity' usurped the place of truth in Formal Logic. The abstraction from material truth and devotion to validity, however, which are the essence of Formal Logic, though they are *prima facie* possible abstractions, did not in fact lead to a valuable science. A logic indifferent to the difference between the true and the false could not in fact be of any use to any science or capable of guiding conduct.

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[1] Hamilton ascribes it to Scotus.

Moreover the assumption that the formal characters of a proposition were unaffected by the occasion of its use turned out to be false. This assumption had to be made by Formal Logic, because without it it was impossible to maintain the difference between a 'fallacy' and a 'valid' form. If, *e.g.*, the same form of words might be a 'valid syllogism' or an 'ambiguous middle' according as it was applied to one case or to another, the whole value of the notion of validity was clearly undermined. Yet it has repeatedly been shown (most recently in No. 104, pp. 462-464) that no form, from the syllogism downwards, could provide a formula that was universally true, in the sense of yielding a valid result in all the cases to which it might be applied. The proper inference from these disconcerting facts is, of course, that it is only the *unused* form which is 'valid'. To be made absolutely valid therefore a form has to be made inapplicable. And this is what in fact Formal Logic has done to its forms. But it has not said so. Nor has it seen that what is wholly inapplicable is unmeaning. Hence, once more, Formal Logic is revealed as a science of the meaningless.

From this analysis of the situation several convenient tests of Formalism may be derived. Any view is Formal, if (1) it abstracts from the context of a judgment and substitutes a 'proposition' (or 'propositional function' in Mr. Russell's terminology), or (2) if it ignores the distinction of truth and error.

Judged by these tests Dr. Mitchell is revealed as a thorough Formalist throughout, who can think of no cure for Formalism but more ruthless Formalism. His Formalism comes out most clearly, perhaps, in his account of meaning. "Any and every discourse" he tells us (p. 437), "is objective without a doubt." "Every meaning is public and common." This clearly disregards truth and error, and is a flat contradiction of the view, that every meaning is primarily personal, and becomes 'common' only when it has been communicated effectively. Again, "the world of meanings, which is the sphere of logic, is evidently everything whatever, the entire universe of being" (p. 438). So it must evidently include all errors as well as all truths: indeed the distinction must be unmeaning from this peculiar point of view. Dr. Mitchell seems as complete a Formalist as it would be possible to find.

II.

This is not however to prove that he is wrong. Even though Formal Logic abstracted from the all-pervasive distinction of 'true' and 'false,' nay from meaning (as I conceive it) itself, it might conceivably be a good and valuable science. For do not all sciences make abstractions and consider separately aspects of reality that are not found separate in nature? Who would argue that *e.g.* Geometry was not a good science, because *bodies* are always more than *shapes?* Accordingly the Formal logician confidently appeals to the analogy of mathematics to parallel his abstractions and to vindicate his proceedings.

But the real issue is whether this analogy suffices to show that the abstractions of Formal Logic are good ones; for there may be abstractions which are bad and futile, and lead nowhere. That the mathematical sciences make abstractions is admitted; also that they are good abstractions, and work. But does it follow that the abstractions of Formal Logic cannot be bad and unworkable? That the abstractions of mathematics are of an extreme sort is not in dispute. But is this as such a merit, or a justification of Formal Logic, or a relevant analogy with Formal Logic? The abstractions of mathematics are not valuable because they are extreme, as Dr. Mitchell appears to think (*e.g.* p. 430), nor are those of Formal Logic still more valuable because they are extravagant. The abstractions of mathematics derive their *value* (together with their *relevance* and *meaning!*) from the empirical fact that they are *useful*, because they are extensively *applicable* to very general aspects of reality; or otherwise, because of all the suggested ways of treating these aspects they have turned out to be the *most* applicable and convenient. But here comes the essential difference. The abstractions of Formal Logic are accused of *not* being applicable to reality: they are challenged, not because they are not extreme, or general, or consistent, but because they are not *valuable.* It is admitted that they are thinkable, and even in a way obvious, but it is denied that they are serviceable. And the reason given is that they are not *applicable* to the other sciences, to actual thinking, and to actual meaning. This charge is no aspersion on the scientific method of abstraction in general, though it does impose on the advocates of Formalism an obligation to show *specifically* that their use of the method has resulted in making Formal Logic a useful science. Until they have shown this, no general analogy between Formal Logic and mathematics helps them in the least.

We see then that for an abstraction to make a good science it has to be made applicable; if it is inapplicable it is worthless. And the Humanist charge against Formal Logic is precisely that it rests on an abstraction which renders it inapplicable to all actual thinking. It is essentially an abstraction from Meaning.

It is in meeting this charge that Dr. Mitchell very definitely breaks fresh ground. He is, so far as I know, the first Formal logician who has seriously and explicitly noticed the fact of Meaning and tried to treat it Formally, and, therefore, whether his doctrine is right or wrong, it is an advance in Formal Logic.

The value of this advance is however somewhat seriously discounted by the facts that in vindicating Meaning for Formal Logic he completely formalises it, uses the term in a different sense from that upon which the charge was based, and has not, unfortunately, understood this sense. He supposes humanist logic to mean by 'meaning' something which is *merely* a process and entirely 'subjective,' so as to leave room for a formal treatment of the objective factor. "Granted" he says, "that a meaning is necessarily meant by somebody in particular; granted that, as part of the content of somebody's consciousness, a meaning is subjective: still if nothing is a meaning unless it is meant by somebody, neither is anything a meaning unless it means something; and this is to say that, if a meaning has subjective content it has also objective content" (p. 437). The concession seems a handsome one, and one is grateful even for small mercies from logicians; but it is not nearly enough: the argument is irrefragable, but irrelevant to the charge. For the demand for a recognition by logic of actual reasoning is not only, or mainly, a demand for the recognition of a subjective factor in knowing; it goes a great deal further. It goes on to claim that the personal is not merely subjective but also objective, or rather that the 'objective' is always intensely personal when it is fully analysed. Indeed it stands to reason that if the personal aspect in meaning and knowing were merely subjective, it would be unimportant and might well be abstracted from, as dream-life and delirium are habitually neglected; for it would not then establish any connexion between one knower and another. A merely subjective meaning could not be communicated. But actually personal meanings are much more than this; they are often communicable and always thoroughly objective. Personality is not merely a *conditio sine qua non* of the genesis of objects, but the motive, aim and *raison d'être* of the processes by which logical objects come to be. Interest, purpose and selection are essentially personal and universally pervade all thinking. They are the very soul of 'objectivity,' for they determine the meaning and function of all the terms that occur in thinking. 'Objects' are the creations of these personal forces, and 'common' objects are the expressions of the confluence of concordant personalities. For when we look closely we see that all 'objects' are *selections*, taken out of an indefinitely larger continuum for some purpose, and necessarily relative to the personal interest which has distinguished them. Should this interest be felt by many persons, it will engender 'common' objects of a wider validity, if by few, of a less.

Thus all men probably are sensitive to cold and hunger, and so no one disputes their 'objectivity': but some are colour-blind and this renders colour more subjective, while comparatively few are musical or mathematical, and this restricts the realms of music and mathematics to the elect: if all but one were colour-blind, would not colour seem entirely 'subjective,' and the one who saw colour a visionary or an impostor?

We conclude then that Dr. Mitchell's concessions are insufficient, and that he has not grasped the full logical effect of the recognition of personality nor the essentially personal nature of meaning.

III.

His own notion of Meaning seems open to serious objections. (1) It is entirely Formal, and does not go beyond the formal relation of a thinker to the object thought, a relation which may be traced, of course, in any thought and any object, true or false, successful or futile, actual or potential. It is only such a Formal view that can be content to say (p. 437) that "a meaning state of mind *presupposes* something meant, by the necessity of its own nature," and that a reference to something "other than the act of meaning it" is all that is required for objectivity. No doubt, if that is all, "any and every discourse is objective," even "a fairy tale or fantasy"; for to such 'objectivity' the distinction between truth and error must be utterly irrelevant. But to mean no more than this by 'objectivity' is to make it nugatory. Moreover it is difficult to see how there could be 'subjective' meanings on this theory. How could even the most random assertion, the wildest absurdity, the most patent lie, fail to be 'objective' in this sense? To be 'subjective' in Dr. Mitchell's use, they would have to identify "relatum and referent," and where is there to be found a form of assertion which *formally* does this? On the other hand, what is the value of an 'objectivity' conceived so widely that it embraces all such rubbish, and makes no attempt to *sift* the true from the false, the valuable from the worthless, sense from nonsense? Surely Formalism comes too cheaply by its 'objectivity,' and offers the sciences a tool not one of them can afford to use without committing suicide.

(2) Dr. Mitchell's notion of Meaning is infected with *passivism*. He describes meaning as essentially a *static* relation, and recognises in it no activity or volitional process. Meaning is a stable relation of the mind to 'objects,' which lie about inertly in the intelligible world, waiting to be 'presupposed' by a meaning-process which happens to light upon them, and so establishes the aforesaid 'relation'. But they are intrinsically quite *indifferent* to what happens to them; whether they are the *right* objects or wrong 'uns, whether they are true or false, affects neither their nature nor that of the mind nor that of the relation; it belongs only to that 'subjective' side of meaning which means nothing to 'logic'. To the Humanist, on the other hand, the 'objects' he means are not 'presupposed,' because they do not *pre-exist* as such. They are not objects he *starts from*, but objects he means to *get to*. His meaning no doubt always refers to an 'object,' but neither he nor the object nor the relation is ever anything fixed and rigid. In the meaning-process all three change and develop. He *learns*, the object becomes *better known*, and the relation *more satisfactory*. Thus the final object is in a sense a creation of the meaning-process which has selected and determined it and used it to achieve its end.

(3) Hence no part and no term of the process can properly be described in other than dynamic and volitional terms. Meaning is not a *state* but an *act*, not a fixed relation between inert terms, but an activity and an *attitude towards* the continuously developing situation which evokes it. As such an act it is *purposive* throughout all its developments,

and always more or less *tentative* and willing to undergo modification in order to attain its aim. In actual meaning we have always to feel our way. Hence in every process of knowing our meanings *grow*, and we have always an interest in their success, and strive to avert their failure. From the point of view of actual knowing, then, what could be more preposterous than to abstract from the vital question whether our meaning *actually attains* the end, 'object,' or 'objective' we aim at? To tell us that we always aim at an object is not enough. For to *aim* at an object is not to *hit* it, and we want to know whether we succeed. Now it is notorious that our thinking often misses its mark, that the object meant is not reached by the meaning-process, and that the object attained is not relevant to our cognitive purpose. Surely only infirmity and feebleness of purpose can console itself for missing one object by hitting another! Nevertheless such failure does not affect the reality of the meaning, though it detracts from its value. The meaning formally exists as much as the *right* meaning, though it happens to be a *wrong* meaning. But does not the *logical value* of the meaning process reside precisely in this difference of 'right' and 'wrong'? Is not the refusal of Formal Logic to evaluate this difference, the arrest of analysis at the formal existence of meaning-*right-or-wrong*, really a refusal to consider the *value* of thought, to advance to the logical level, and an arrest of inquiry on the level of psychological description? And is it not humorous that the lofty pretensions of Formal Logic should fail so signally to raise it above the level of the 'psychology' it despises?

If logicians could be induced to study the *failures* of meaning as well as the successes, it would further become apparent to them that the meaning-process is always and essentially purposive and volitional. For it is precisely in such cases of frustrated effort, where the object meant is *not* attained, that the consciousness of meaning grows most intense. Who has not suffered agonies from inability to utter an elusive meaning hovering 'on the tip of his tongue,' say a forgotten name, which he 'knows perfectly well,' about which he remembers dozens of particulars and which he could pick out from among a thousand, if only he heard it? On Dr. Mitchell's theory this condition would be incredible. For there is no inert object here, easily apprehended by an inerrant thought, but, in the place of the object we have an intensely active aching void which breaks the successive waves of meaning and shatters their assaults.

Any account of Meaning then which ignores its activity, its purposiveness, its struggles to achieve success and to escape failure, is nothing but a *fiction*, and a futile travesty of actual meaning.

IV.

But even if we waived our objections to the gross psychological misdescription which the Formal logician's account of Meaning has been shown to involve, should we have got to serviceable fictions or abstractions, to anything the sciences could use, or even tolerate?

It would seem that the answer to this question must be—*No!* For what we should really have done would have been to pledge ourselves to take as an absolute and paramount truth the convenient fiction which we may denominate the *Fixity of Terms*, and we should then find ourselves committed to such reverence for it as would make the progress of knowledge illegitimate and inconceivable. As Dr. Mitchell rightly says (p. 447), "the sole business and interest of the formal logician" would be "analysis of the given relational combination of concrete experience," and he would have "no legitimate regard for any patented method of investigation" which might be needed by epistemology, metaphysics, psychology or medicine.

In this account of the attitude which Formal Logic should assume towards the sciences the sting lies in the '*given*'. Everything must be '*given*' before logic begins to 'analyse'; the *getting* of knowledge does not interest or concern it. 'Logic' is essentially an *ex post facto* analysis of knowledge *already acquired*, which rearranges it according to certain technical assumptions and 'presuppositions' of its own; it is emphatically *not* an attempt to describe and evaluate the actual processes of acquiring, testing, and assuring knowledge. The sciences however are all interested in the *getting* of knowledge; they all (with the possible exception of theology) conceive their knowledge as *capable of progress*, and aim at extending it. Hence they simply cannot afford to conceive the Fixity of Terms as absolute. It cannot be for them more than a *methodological fiction* relative to the need of conveying an initial meaning, as a basis for inquiry. They recognise, in other words, that every inquiry 'presupposes,' *i.e.* requires, a certain preliminary definition of terms, sufficient to delimit its purpose, meaning and scope, and that absolutely fluid terms would not serve this purpose, because they could not convey any one's meaning. But this preliminary fixation is never conceived as a bar to the development of scientific meanings and to the reconstruction of definitions: as the meaning-process proceeds and the new knowledge accrues, all the terms involved are modified and enriched in every science.

The reason is plain, and psychology reveals it. It is *psychologically impossible* that any one should make a *real* judgment, except with the idea and purpose of conveying thereby some *new* truth. For no one is so fatuous as to wish merely to rehearse a truth that is already known and understood by all. It follows that the logician, if he has any ambition to describe actual thinking, must declare that it is the aim of every logical judgment to some extent to *alter* the meaning of the terms it uses. Whatever the terms involved in the judgment may be, its subject and its predicate would not be combined unless a certain *novelty* emerged from the combination. And this novelty modifies the meaning of *both*. For if the judgment is real (and of course the 'judgments' contemplated by Formal Logic never are), "it establishes a new and previously unknown relation between its subject and its predicate. 'S' is henceforth an S-which-can-have-P-predicated-of-it, and 'P' a P-which-can-be-predicated-of-S. Thus both the psychological associations and the logical associates of S and P are changed."[1]

Now the unforgivable sin against the spirit of truth of which Formalism stands convicted is that it refuses to recognise novelty, change, growth, progress, purpose and value in the realm of thought. True, its refusal sprang originally from an apparently trivial and venial misconception about the methodological principle of the Fixity of Terms. But when its error develops its appalling consequences it perversely refuses to correct it, and clings obstinately to its false assumptions. Rather than conceive its principle as methodological and relative, it attempts to ignore actual thinking, to construct elaborately technical pseudo-sciences out of impossible and inapplicable abstractions, and to arrest the progress of every science that is blind enough not to see through its pretensions or weak enough to tolerate its tyrannical dictation. This then is what Formal Logic is really about, and is why it seems necessary to show that Dr. Mitchell is quite as unable to conceal its scientific futility and malignant influence as any of the earlier apologists for Formal Logic. To make it more consistent is not to make it better but to make it worse; to make it wholly consistent, is impossible. But were it possible it would be to make it wholly absurd.

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[1] From 'Scientific Discovery and Logical Proof' in *Studies in the History and Method of Science*. Oxford, 1917, p. 246. *Cf.* also *Formal Logic*, ch. xiv., § 4.

IV.—THE BASIS OF BOSANQUET'S LOGIC.

By L. J. Russell.

A.

We may begin with an attempt to state the fundamental propositions on which Bosanquet's views are based. As always in dealing with a system whose various aspects are closely interdependent, it is not possible to arrange them deductively; but it is possible to see certain large points of view which act as guides in the consideration of the different problems which arise on the way.

I. Perhaps the widest of these is the view that "all judgment is a definition of real reality".[1] In one sense, the whole of the Logic is a commentary upon and explanation of this sentence. Exactly what is meant by "real reality," and how the various judgments whose subjects do not as such exist in space and time can be said to define reality: these are large and complicated questions, not to be discussed in a preliminary account. But one point may be noted here, in its positive and its negative sides. What actually exists in space and time, being that with which our experience begins, and of which our knowledge is in the main the interpretation and organisation, is, though not reality itself, yet the nucleus of reality. Or, to vary the metaphor, it is the touchstone of reality. Not everything real has the form of actual existence; but a reference to actual existence is involved in everything real. Without this reference, however indirect, judgment wanders. And in consequence, we have the principle of great importance, stated in the form, "The subject is taken as possessed of that kind of reality of which it is capable,"[2] and more clearly elsewhere, "The reference to actual existence is presupposed in the sense possible for the subject".[3] This is the positive side; its nerve consists in the fact that since reality consists of individuals, hence wherever a subject is an individual, or presupposes an individual, there the reality of the subject is presupposed; and whatever degree of individuality is possessed by the subject, a like degree of reality is presupposed. And "degree of reality" involves capability of connexion with actual existence. The negative side is of the greatest importance; for it refuses to allow us to attempt to construct an individual of such a sort as cannot exist, *i.e.*, does not satisfy the concrete conditions of actual existence, and judge about it. The more successful we are in our construction, the more false our judgment becomes. "We can only escape from this result if the fancied content is such as is in its logical nature debarred from being real, *i.e.*, a mere abstraction, and is therefore incapable of claiming to stand for a reality."[1]

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[1] *Logic*, 2nd edition, i., 227, *cf.* i., 142, n. *a*.

[2] I., 139, with a qualification we need not here consider.

[3] I., 224.

II. The second principle concerns necessity or universality, and is complementary to the first. Every judgment exhibits necessity, and necessity rests on the nature of a universal. A universal is an identity in difference. There are universals because there are wholes with characteristic structures which bind the parts into a totality; the necessity in judgment rests on insight into the way in which the nature of such a totality is exhibited in all its parts—links part to part within the whole, and assigns to each part its place in the whole. Now various wholes can have the same characteristic structure, which, however, is manifested differently in the different wholes; and a judgment based on the characteristic structure as exhibited in one whole cannot be transferred without adaptation to a different whole with the same characteristic structure. Or, as it may be put, a universal can never be given once for all, to be reasoned upon, and have consequences deduced, formally. The result is to reverse an old view. "Logical" does not mean "formal"; rather it means "material". Let us suppose that you could construct a concept, and deduce various consequences about it. Then your consequences would apply to reality wherever your concept held without alteration or modification. But on account of the very nature of a universal, this would, in theory, nowhere be the case. Such a judgment would give what Bosanquet calls generalisation by mere determination, or formal generalisation. Whether it applies to reality, and where it applies, are questions it leaves undetermined. It is abstract, and as claiming by being a judgment a completeness it does not justify, untrue. Here we see the influence of Bosanquet's view of judgment as a definition of reality.

But this is not all. The very nature of a universal makes any such construction of an abstract concept—where entities and relations are lifted bodily from concrete conditions and treated in themselves—theoretically impossible. In concrete experience you are not dealing with abstract terms and relations *plus* concrete detail. In investigating characteristic structure it is not as if you were trying to discover the nature of an object by looking at its several reflections in various distorting mirrors. There are concrete wholes; and these alone are the reality with which we have to deal, and of which our judgments endeavour to speak. And while we can discern the characteristic structures — the universal natures—of these wholes, our discernment is strictly relative to the wholes themselves. In so far then as we deliberately abstract from concrete detail, we are applying to partial wholes what we have discerned of concrete wholes. The grounds of our judgment, and the subject of our judgment, do not fall together.

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[1] I., 227.

In consequence then of the very nature of a universal, no judgment can be complete which is not based on an analysis, not merely of the formal nature of wholes, but of their material conditions. This analysis is necessary not merely to determine the judgment itself, but also to determine its range in and conditions of application to reality—an essential part of every judgment.

Here we have two results. (*a*) Which follows simply from the nature of a universal: That every judgment is relative to a whole of a particular sort—*viz.*, a system which expresses through all its parts a definite nature, in the light of which the nature of the parts, and of their place in the system, can be understood. Such a system Bosanquet calls a morphological unity. "The connections thus prescribed between part and part within some systematic whole are necessary connections."[1] (*b*) That if the judgment is really to hold of reality, the system on which our judgment is based must be such as to find a place, in some form or other, in the reality which is the systematisation of actual existence.

III. These two principles give rise to the very important consequence, that every judgment has the two aspects of fact and necessity. We can get an appearance of self-completeness in a judgment, by the construction of a specific system of relations, giving rise to judgments of necessity. But here the question of the application to reality of such a system has been left out of consideration. And again, we can get hold of reality by gradually gaining insight into individual systems as found in existence, so as to see how their parts are related to the nature of the wholes. But here the question as to the necessity of the connexion between the whole and its parts has not been answered. Our insight has stopped with the fact of the connexion. The problem is to analyse such individual systems found in existence, into specific systems of relations necessitating the nature of the parts. And in the attempt, there is a perpetual struggle between the two aspects. "The moment thought has seized a significant idea, it is committed and must go wherever the idea carries it, in spite of the demonstrative 'this'."[1] The judgment, in other words, cannot be confined to the given whole of present perception, but depends on reality as a whole. But while a nexus of significant ideas carries us in the "groove of necessity" beyond perception, still the unexplored elements of perception drag us back, and refuse to allow that our judgment can be final. Only a whole thoroughly explored, both in its internal nature and in its contact with actuality, can give a complete judgment.

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[1] I., 135.

IV. This brings us to the fourth important point. A relatively complete judgment is to be found only when we are dealing with real teleology. For only there are we in touch with a system which is at once taken as real, and composed of thoroughly explored relations showing the necessity of the connexions of the parts within the system. "By real teleology I mean the embodiment or operation of a conscious purpose entertained by a human intelligence." The lowest type of real teleology is to be found in a machine made by man with a definite object; low, because the purpose does not exist in intellectual form within the machine itself. Higher types are to be found in "the phases or embodiments of man's intelligence and conscious will". In them we have "totalities which combine an explicit intellectual unity with determinate interdependence of parts".[2] In such a whole we have necessity at its best, given with "the individuality which supports it".[3]

The completeness of judgments may be estimated by the degree of their approach to real teleology. Thus the generic or analogical judgment rests on an estimate of the purpose served by a system or unity (quasi-teleology or secondary finality), and is consequently higher than the pure hypothetical judgment, "which necessarily omits the teleological or quasi-teleological import which gives the content of the judgment its interest and significance for knowledge ".[1]

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[1] I., 126.

[2] II. 190.

[3] With the judgment based on real teleology, though we have attained the highest type of ground, we have not attained completeness. For teleological systems exist within the given reality and depend on it.

We are now in a position to summarise briefly the conception of reality resulting from these propositions.

Throughout Bosanquet's Logic we do not find, as we find in some writers, any fundamental distinction between "being" and "existence," or between "actual" and "real". If an entity had only being, and was not in some way essential to the system of reality, that would be because it was an unreal abstraction; and any appearance it might have of serving as the basis of a true or significant judgment would be illusory. For a judgment apparently based on such an entity would, if true and significant, really be based on the concrete reality from which the entity in question was arbitrarily torn. And again, to distinguish between the actual and the real would be to encourage the false view that it is possible to separate "given fact" from interpretation or meaning. The result, then, of Bosanquet's theory is that only the real—the actual, the existent as truly interpreted—can have being in the strict sense, and can form the subject of judgment.

In determining the nature of the real, Bosanquet starts with what is given in presentation. As we are merely trying to discover his use of the word real, it will not be necessary to discuss the arguments by which he shows that the given is upheld by interpretation. But one point stands out. The real must be self-subsistent. And the given is dependent. We cannot understand it without taking into account many other facts which are different from it, as it is given. Now the given as interpreted takes us beyond a mere series of presentations inhabiting space and flowing in time, and involves a world of meanings and constructions. If we could complete the process, so as to arrive at a self-subsistent individual, that would be reality, and all constructions, all entities which were not essential to this process would fall outside reality.

Such would be the impression we should derive as to the meaning of the word reality. And I believe it represents fairly correctly Bosanquet's use in the Logic. In Metaphysics the word has a wider and more embracing meaning. For Bosanquet would hold with Bradley that, in the end, everything however abstract, however erroneous, falls in some way within reality. But the criterion of reality adopted for logical purposes will differ from the metaphysical one in being on the one hand less, and on the other hand more severe. Much must be admitted as actual or real which metaphysics would insist on altering before it would accept it as real: *e.g.*, space and time as exhibited in concrete existence. And many things can be rejected as unreal which Metaphysics can take in, provided they submit to correction: *e.g.*, all pure abstractions. While this is so, however, the ultimate meaning of the word must not be forgotten. But this remembrance must operate chiefly in keeping the logician humble, and in forcing him onward to the self-subsistent; it will not prevent him from radically refusing to accept as legitimate grounds of judgment anything not essential to the march toward the self-subsistent.

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[1] I., 219.

Thus the logician will brand as unreal all entities posited by scientific hypotheses which ultimately turned out to be unjustified, such as the Ptolemaic spheres in Astronomy, and Phlogiston in Chemistry; pure abstractions such as infinite number, or space in two dimensions; and all individuals of fiction, such as Hamlet or Clive Newcome. And because they are unreal he will refuse to admit that they can in the genuine sense be subjects of judgment. If they are granted to be subjects of judgment in some secondary sense, it will be because and in so far as they are not altogether unconnected with the real.

B.

These then are the four propositions we have noted as the most fundamental; and it is clear that the first two are really basal, the two last being consequences. In the limitative sense Bosanquet gives to these four propositions, we shall have to deny them all. Bosanquet's view of reality imposes a restriction on the sphere of true judgments which we shall be unable to accept; in his account of the element of fact in judgments we shall find a transition from "posited system" to "real system" depending on arguments which we shall have to reject; to his view of a universal we shall have to oppose a different view; and lastly, we shall see reason for suggesting that other systems besides systems of real teleology can provide sufficient ground for a true judgment.

(*a*) Touch with actuality was necessary to judgment, we saw, on account of the nature of a universal, which caused any formal generalisation firstly to be theoretically imperfect, and secondly, to remain out of touch with reality as a whole.

Let us consider the first of these points. What it must come to is this, that the exploration of a relational system must take the system in some one particular setting. Is this because the relations or entities cannot be thought of apart from the particular setting? No, for it is admitted that they can and must be so thought of, though to think of them without any setting would in Bosanquet's opinion be to empty them of significance. It is rather because any attempt at understanding them apart from their setting must rest on an estimate (not a thoroughly grounded judgment) of the difference which would be made in their characteristics if this setting were replaced by another. Even when we take a relational system in one particular setting and attempt to estimate its functioning in that setting, our judgment is abstract; for in the first place we are not taking the system in its whole setting, and in the second place its setting consists of a mass of unanalysed conditions. And this is even more the case when we attempt to generalise, so as to make our judgment applicable through the whole range of reality.

The difficulty is to see how, on this view, any predication could be possible at all. We should not on this point, Bosanquet says, be needlessly purist. A purist logic would require every generic judgment to be "commensurate" or "characteristic". "Man breathes" would not be allowed, for other animals do so also. And the argument would be that *man's* qualities are qualified by relation to his humanity; "so that in order to represent them as features of *man* they ought ideally to have certain modifications assigned to them, while in their abstraction they can only be set down as correlative to the no less abstract idea of animality as such".[1] Bosanquet, however, is not willing to go so far. Such attributes are, he says, at least partial identities between man and the other animals. He grants that knowledge expressing such attributes is imperfect, but goes on, "The rule to be borne in mind in such cases is that imperfect knowledge only becomes false when mistaken for perfect knowledge". There is in this much to be discussed, notably the ideal which Bosanquet regards as belonging to judgment (*viz.*, to express a truth completely adequate to its subject): but we shall not deal with this here. What we have to discuss is the question of the applicability, on Bosanquet's view of universals, of the same predicate X to two systems A and B, in which X appears differently. Every predicate X is a system having its own characteristic structure, with consequences x, y, z . . . for X; and we have to ask, whether these consequences x, y, z, etc., are different for X according to the system A or B in which X falls. On Bosanquet's view of identity in difference, this must be the case; and we shall have to pursue the endless alteration of X, x, y, z, of x's, y's and z's consequences, *in infinitum.* Every predicate would thus be a veritable Proteus, which we were compelled to define by its momentary shape. Logic would be dumb before such a situation. We can only avoid this, so far as I can see, by admitting that while, when X is part of a wider system A, B, or C, it has varying consequences *for the varying systems A, B, and C*, yet its consequences *x*, *y*, and *z* must be the same for *it* (*i.e.*, for X) *wherever it appears.*

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[1] I., 209.

We have here two opposite views fraught with vastly divergent consequences. If predicates are systems whose consequences are *for them* the same in whatever wider systems they may form elements, then judgments relative to such predicates can be complete without an investigation of the precise points at which and conditions under which these predicates attach to concrete reality: hypothetical judgments can then be in a definite sense completely true. But if, on the other hand, the consequences of predicates differ (even for the predicates themselves) with the different systems within which they fall, then no judgment short of the judgment which takes in the whole of reality can be true. Bosanquet holds the latter; it follows from his account of universals strenuously adhered to; but it seems to make partial predication not merely imperfect, but impossible.

(*b*) In many of the detailed discussions designed to show the categorical basis of various types of judgment, we find it shown that every judgment involves as its ground, mediate insight into a complete system; but in none do we find anything more than an identification of such a complete system with the categorical basis involved in judgment, and in none do we find it made out (though it is often asserted) that such a system must itself be real.

Very significant in this connexion is the analogy of the picture, which is "an illustration of the ultimate nature of logical necessity or relativity and its relation to fact, which is . . . at least true in every detail".[1] Now the essence of the illustration is to point out that it is an individual whole taken as a totality or determining system, which imposes certain necessary relations on the parts in virtue of its nature. And so far, there is nothing to show that the individual whole need be anything more than posited, or supposed. The transition is explicitly made without any argument in a later passage. "In every judgment there are differences within an identity. In every judgment therefore there is affirmed a necessity based on a reality."[2] Similarly the excellent

[1] I., 242-243.

[2] II., 237.

account of necessity shows only that necessity involves "mediate insight into a complete system," and not what he further insists upon, namely, "dependence on the one ultimate system".[1]

What is the basis, then, of Bosanquet's transition from the fact that an individual system is involved in every judgment, to the conclusion that hence every judgment is based on a reality? It is not simply that reality is defined in such a way that every individual is *eo ipso* identified with a reality. This would conflict with the whole treatment of reality throughout the Logic, where the nature of the actual imposes on reality restrictions which in many cases render impossible such an identification; and from these restrictions the condition results, that only such individualities as can be taken up in some way into actuality (the precise meaning of which we shall discuss later) can be fit subjects for judgments. How, then, is the transition made?

The justification of the transition is arrived at by procedure along two convergent lines of argument. One is derived from a consideration of the nature of individuality, where it is desired to establish the result that there is no complete individuality (and therefore no genuinely true judgment) short of the whole of reality (with, apparently, the corollary that except with a basis in actuality no group of relations can constitute even a partial individuality). The other is derived from a discussion of the limits of supposal, the outcome of which is that only a supposal based on actual reality can exert inferential force. And in the last resort the argument turns very largely on the simple conviction that a judgment must be based on actuality in order to hold of reality, interpreted in such a way as unduly to narrow the meaning of reality.[2] Both these lines of argument we shall have to challenge. And as the latter argument appears to us to be of central and vital importance to Bosanquet's whole position, we shall consider it first at some length. If the discussion appears too lengthy, we would urge that its complexity was unavoidable.

C.

A judgment which was completely true would, on the view we are discussing, be one whose subject was accepted in its entirety, and without any reservations, by reality (reality considered as the complete whole to which we are led in our attempts to understand what actually exists). For only the real can provide a satisfactory ground on which to stand in deducing consequences. But, the view insists, on the level of imperfect judgments—and all our judgments are imperfect—we can depart from complete reality, and yet be said to judge in a strictly philosophical sense. Our judgments, though not possessing complete truth, have yet the marks of genuine judgments. Of these incomplete judgments, the ones most important for the purposes of the present discussion are the lowest types, hypothetical judgments: those namely dealing with abstract relations, and, closely connected, those dealing with supposals. Clearest cases of these are to be found in Mathematics and the spheres of knowledge based on Mathematics. The result which emerges from Bosanquet's discussion is this. What we need as the subject for judgment is some totality, possessing parts whose characteristic nature is structural, *i.e.*, subordinate to the nature of the whole. And some numbers, and some figures in space, while not actually existent, while abstract, appear to possess just the required nature.

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[1] II., 223-229.

[2] This narrowing of the meaning of reality is essentially involved, I think, in developing along the lines of Bosanquet's Logic the view expressed *e.g.* by Bradley (MIND, N.S., 60).

In what way, then, must connexion with reality be maintained in such judgments? Bosanquet sees this question clearly. In what sense, he asks, are abstract numbers and figures actual?[1] It cannot be answered that they exist merely as present in the individual mind. Nor are they actual in the way in which "material things or their sensible qualities" are actual. Their selection (*e.g.* that of a typical ellipse—for not every figure, nor apparently every number, is regarded as having this totality) is arbitrary, involving a subjective quasi-teleology, and is thus not justifiable on purely geometrical (or numerical) grounds. Even if space is accepted for logical purposes as having "a peculiar actuality of its own," still this is not so clear of geometrical figures. "They are not the shapes of actual objects; they are not identical with any perceptible figures; they are not distributed through space nor present as special characteristics in any portion of it." How then is reality the ultimate subject of such judgments?

The answer to the question is of the greatest importance. Such numbers and figures, he concludes, *are* real, though abstract. They are conditional, "but within a world which itself can be predicated directly of the reality with which we are in contact by means of perception". If it is urged that they are only possibilities, the reply is, that they "are at least *real* possibilities, that is to say, their fundamental generating relations actually exist in the world which centres in present perception ".

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[1] I., 181 ff.

We have then the following results. Some numbers, and some figures in space are characteristic totalities, and hence fit subjects for judgment. They are *also* real, in the sense that " their fundamental generating relations actually exist ". But the further question arises, whether it is *because* they are real, that they are fit subjects for judgment. For otherwise it will on Bosanquet's view be false (as involving a false implication) that the ultimate subject of judgment, even as regards spatial figures, *must* be reality.

How then does the transition from " characteristic totality " to " reality " receive justification?

There are, as we have said, two lines of consideration, both brought out in the comparison of geometrical figures with imagined wholes.[1] In the first place, it is suggested that no imagined whole can be a truly self-sufficing totality. But if the theory of judgment depended on this point, then while Metaphysics might say that reality is the ultimate subject of every judgment, it would be better for Logic to confine itself to the statement that only a truly self-sufficing totality can be the ultimate subject of any judgment. For the discussion as to what constitutes a self-sufficing totality belongs to Metaphysics.

The main point, however, is different. Bosanquet would not hold that imaginary conceptions exist only in the minds of those who think about them. They exist rather " in the identical reference which these minds are stimulated to make to a world of meanings ".[2] But in so far as this world of meanings is "*explicitly* discontinuous with and detached from the world of fact," the judgment which upholds it must be regarded as " judgment of a peculiar kind and under peculiar conditions ". For if any such judgment were taken at its face value, it would refer to the actual world; but it refers really to a world which is itself only conditional. Every judgment, as Bradley taught, involves an abstraction, the justification of which depends on the world within which the judgment falls; but a judgment made of an imaginary world not merely involves this abstraction, but " is conditional within a world which itself can only be predicated conditionally and not directly of the reality with which we are in contact by means of perception ".[3]

But why, we must ask, *should* we need to predicate the imaginary world of the reality with which we are in contact by means of perception? Are our judgments false even within this imaginary world unless we can do this? Here is the crux of the matter. Bosanquet would reply in the affirmative. Judgments regarding figures in space are true just because space is actual. "The subject of each such judgment is reality qualified as a structural whole which embodies properties rooted in an *actual* relation and controlling the consequences of that relation at every turn." Where this control by actual relations is lacking, judgment proper is lacking.

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[1] I., 183. [2] *Ibid.* [3] I., 184.

This is brought out more clearly in the discussion regarding supposal. On Bosanquet's view every hypothetical judgment presupposes some underlying system on which it rests. And this system must at least in part be actual. We are not restricted in judging to a system which is completely actual, but if a supposition we are asked to entertain is such that "we are not aware of any reality which furnishes a system such that the supposed case is capable of entering into it," then we refuse to entertain the supposition, because we have no ground or basis upon which to stand in judging as to the consequences of the supposition. "We may, of course, freely imagine *a* system, as complex as we please; but if we proceed to *judge* about the consequences or results of such a system, it must thus be related to these consequences within some further system; and this further system must be actual."[1] The fundamental point here is, that no system which is merely supposed, however complex it may be, is sufficient of itself to enable us to deduce its consequences. Only an actual system, it would seem, can possess this characteristic. And if we cut ourselves off from reality, judgment proper goes. "When supposition begins to infect the nature of reality, we are beginning to suppose and not to judge our sequence." The meaning is plain: that a non-actual system furnishes no ground whatever, provides us with no consequences which follow necessarily from it. Hence when we suppose ourselves to be drawing conclusions, we are merely adding further arbitrary details to our complex of supposals. To put it otherwise, a set of supposals which are not capable of falling within some real system, is not a genuine system, or totality at all, has no principle of unity or necessary connexion within itself.

This result is based on the principle that fact on the one hand and connexion of content on the other are inseparable aspects of every judgment, and that hence you cannot fabricate a pure connexion of content, without regard to fact, in order to see what consequence will follow. While the ultimate character of reality which is the ground of a hypothetical must be admitted to be unknown, still there must always be some actual system (*i.e.*, known to be fact) within which a supposition must be capable of falling. "*What must exist* is a system that, subject to the supposition, necessitates the consequence drawn from the supposition. *Whether the content itself exists or not* depends on whether it is an element essential to the system; and *how it exists*, on the nature and self-completeness of the system."[1] And if no such system exists, the supposition is illegitimate.

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[1] I., 272.

Bosanquet, however, seems here to be laying down a condition which would render strictly impossible all supposal whose antecedent turns out not to exist in fact. Thought can determine any actual system, if it determines it completely, only in one way; and, if you were to take such a system in its completeness, it would reject your supposition. If then it is desired to retain as legitimate any supposition which is known not to be given fact, it will become necessary to keep out of consideration all elements of reality which would interfere with the supposition. We do this, as Bosanquet remarks, in Mathematics; but we *must* do it in all genuine supposition. Even when the supposal turns out to be fact, it must not be known to be fact, and thus the system on which our procedure is based is something less than that actual real system.

We are, therefore, not resting entirely on an actual system. When Bosanquet says that the hypothetical judgment presupposes an existing system qualified by the supposition contained in the antecedent, he ought to mean, that the hypothetical judgment involves a relatively complete whole resting upon properties of reality which function in the presupposed whole, *precisely in the same way* as they function in the actual real system from which they have been abstracted.

The account of how these properties function in relation to the new whole to which they were transferred would then follow the lines of the excellent account of the way in which universals operate in thought.[2] "The existing connexions or universals with which the mind is stored, act as clues among the experiences which confront us, selecting those that are kindred or complementary, and inventing new systematic ideas after the manner of what have been called proportional systems, and by means of relative suggestion. That is to say, that an existing connexion of thought, when confronted with new matter, is able to reproduce itself in a new form" which is (*a*) "appropriate to the new matter," and

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[1] I., 273. Italics mine.

[2] II., 179 ff.

(*b*) "continuous with the connexion as previously thought". Continuous, because the connexion between the new objects must have "a real kinship with the connexion between the old," and appropriate to the new matter because "differentiated by the nature of the new objects themselves".

This account would show how we can make a genuine judgment based on a supposal which, though not actual, is yet capable of entering into a whole which in its entirety is not real, but whose connexions or universals are known to operate in some real system in a manner continuous with, though differentiated from, the manner in which they operate in the supposed whole.

But at the same time it would seriously endanger the proposition that reality, in Bosanquet's logical sense of the word, is the ultimate subject of judgment. For the justification of the hypothetical judgment, arrived at in this way, would lie only partly in the nature of the universals as exhibited in the real system from which they were taken; and its final justification would depend on the way in which they were modified by the nature of the new whole created by the supposal. And hence, not reality, but some aspect of reality as modified by the supposition, would be the ultimate basis of such a judgment. And the judgment would be just as true, since depending on the same principles, as any judgment whose subject was wholly real.

But Bosanquet would not admit this. For on his premises, if the judgment is to be genuine, the new matter must be real. In so far as the whole which is created is unreal, you are in the difficult position of having to do all your judging on the basis of the nature of universals or connexions as they are exhibited in the real system from which they were taken; you have nothing to stand on in determining how these universals or connexions are modified in their application to new matter. "The content of [such] judgments has an *indeterminate* place in reality so far as it has a meaning or objective reference, and depends on *determinate* reality so far as it proceeds to determine actual consequences."[1] As we are told elsewhere,[2] a hypothetical judgment whose antecedent does not really exist depends for the affirmation of its consequence on the affirmation of some reality, limited by the reservation that not the whole reality is to be taken. The element of supposed reality is the element of reservation, and that of real reality, of affirmation. And a pure supposal would be all reservation and no affirmation; and would have no grounds at all.

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[1] II., 190-191.

[2] II., 11.

Here, I think, is a confusion. Bosanquet considers that all supposal starts with an actual basis in reality, and proceeds by modification and reservation.[1] His examples show this. "If I suppose that over a certain spot of ground gravity ceases to operate, I can form some kind of conception of the consequence. I affirm the present state of things with reservation for the modification introduced by the limited absence of gravity. But if I suppose that there is to be no gravity at all in the world, the reservation gets the upper hand, and nothing, I presume, is left for me to affirm."[2] Again, in his treatment of negation, he shows that significant negation must have positive consequences. And his example is similar. Cut off all cohesion from the world, and nothing positive results. But cut off cohesion from a connecting rod, and detailed results follow. We fully admit this, as regards both instances. Positive grounds are necessary before any consequences can follow. But this is confused with, Real grounds (*i.e.*, grounds with a basis in actuality) are necessary before any consequences can follow. This seems clear from a passage we have already quoted from.[3] "You choose to treat as real in one sense what you do not affirm to be really real, and you record the groove of necessity which manifests itself when the artificial reality is considered as though forming part of the real reality. Of the differences within the universal which determine the remaining differences (in this case the consequent), part (the hypothetical ground) are only sham reality, and, therefore, although we seem to exert inferential activity, we cannot affirm the conclusion of the inference." True, we cannot affirm the conclusion of the inference, *of actual reality;* but the inferential activity was real, and not seeming. Yet Bosanquet goes on in this passage to argue as if the inference was not a genuine inference, if the grounds were not real; helping himself out by showing that the inference is not genuine if the grounds are not positive.

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[1] If we were compelled to test the legitimacy of the fundamental propositions of geometry by an act of this kind, geometry, I feel, would never have discovered "the sure path of science". There, as we have already seen, universals operative in our actual experience are abstracted from the matter in which they are embodied, and "continued imaginatively in new matter". The new matter, as we have seen, makes a difference; and although it too has been derived from actual reality, still in its new connexion it results in a non-real whole. A genuine supposal, if completely expressed, must stand the test of self-containedness. What we have to do in Geometry is to state *all* we are supposing in such a way as to make explicit precisely what elements we have combined into the whole with which we are dealing; and that whole is sufficient as a basis for our judgments. The question is not, how a particular supposition would modify the actual structure of reality, but, what are the characteristics we are including in our total supposition.

[2] II., 11-12.

[3] II., 11.

The same thing appears in the parallel discussion at a later point.[1] The real ground of the consequences of a supposal, he there says, is determinate reality: the content of the whole judgment (dealing with a supposed subject) has indeterminate place in reality. Yet he goes on to say, that while the ground must be real, the factuality of the ground makes no difference to the apodeictic force of the judgment. "The basis of the synthetic transition is here as everywhere the nature of an identity or universal, and that the universal is affirmed to be fact makes no difference to its apodeictic force. What . . . that apodeictic force may be, how it should come to pass that one thing should necessitate another, depends . . . on the ultimate fact of the nature of knowledge."

But if the view indicated in this quotation is correct, what hinders us from predicating the judgment, not of reality as resulting from the actuality with which we are in contact in presentation, but of the subject of which we have actually made the judgment? Grounds need not then be realities (in Bosanquet's restricted sense), but they must be positive contents.

Bosanquet's contentions are supported by a discussion of certain supposals which, I cannot help thinking, are not the only types which could be taken. "If two were four, then three would be six." "Given a first cause, we can dispense with the idea of a regress to infinity." "If a man were throughout the whole period of his conscious life alone in the universe, his moral purpose could be nothing but to please himself."[2] "If a being were confined to space of two dimensions . . ." *In all these cases we are not supposing enough.* We are helping out our supposal by reference to the general characteristics of some aspect of reality. And our supposal renders it impossible to know how far these general characteristics are to be taken as unchanged. But Mathematics supplies many instances of complete systems being supposed, which do not depend for their completeness on anything not explicitly specified. The non-Euclidean Geometries are cases in point just as much as the Euclidean. We have other instances in certain games—which create a world within which human beings are to act, and specify explicitly the conditions under which the actions are to take place. Judgments with reference to certain moves (*e.g.*, that a move made by one player opens up certain possibilities for his opponent) are not to be set aside as judgments only in a secondary sense. For they bear all the characteristics of judgment save one—their ultimate subject is not reality. But we have seen reasons for rejecting this characteristic as not being essential. We should therefore conclude, that every judgment is relative to some system, whether real or supposed, which is sufficiently complete to render the judgment necessary; for we hold that it is possible to construct various systems of this kind without finding it necessary to draw on any unspecified portions of reality. If we specify the precise portions of reality on which we are drawing, then not reality, but the system we have specified, is the ultimate subject of our judgment.

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[1] II., 190-192.

[2] I., 273.

We may take as an elementary instance the game of Noughts and Crosses. The game starts with a square divided into nine squares, which have to be filled in by two opponents playing alternately. The first player (A) puts a O while the second player (B) puts a X. That player wins who first succeeds in filling in three squares in a line. The game is in all its essential characters parallel to chess; but for our purposes it is much more suitable than chess, owing to its greater simplicity, and owing to the fact that generalisations are much easier. For instance, if A puts his first O in any corner square, he can win unless B puts his first X in the centre square. Now what we have to note is that the conditions of the game provide a system of order, whose positing posits also a definite set of alternatives, resulting in so many games, and at the same time decides precisely what consequences these alternatives will have. After A and B have played a certain number of moves, an analysis of the remaining alternatives gives a necessary answer to the question as to whether A can win, or only draw. We are working of course in the original form of the game with the nature of space, and it may be said that it is the nature of space which is under consideration. But the spatial form of the game is not essential. We could start with any nine elements, represented, *e.g.*, by the letters A, B, C, a, b, c, α, β, γ, or by any other signs, and allow the opponents to choose one alternately, that player winning who succeeded in obtaining any one of a specified set of sequences (*e.g.*, Aaα, ABC, etc.). Nor does time enter. It may be said that A and B have to choose alternately in time; but the completed alternatives, which are the ground of decision, do not involve time, and refer only to order. We have here, it seems, a pure non-spatial, non-temporal system of order, which is constructed at will, from very simple premises, affording a large number of possibilities, and deciding as to the nature of these possibilities. And it seems as if the investigation of these possibilities is just as much a science (very elementary indeed, but a science nevertheless) as any other science. Chess shows the same character in an infinitely more complex form. Judgments within the science are objective, universal, and necessary. They explicate the nature of a self-subsistent totality. Thus they are not mere tautologies, nor mere statements of conjunctions; for the principles involved in stating the system are true *developing* or *generating* principles. And in judging as to the results which follow from the system we are wholly within the system, and not resting on Bosanquet's reality at all. The nature of the system involved in such a game is in all essentials identical with that of the system which is the subject-matter of Arithmetic, or of Geometry; and this nature appears more clearly from a consideration of a game, where there is no question of the application of the results to existence, than in the case of Arithmetic or Geometry, where this application is possible.

It is often said that the mind gets the elements of these wholes from what actually exists. This is in a sense true. But it does not prevent the new wholes from being independent of actuality. Universals met with in actual existence are "continued imaginatively in new matter"; this new matter is derived from actual existence; but the guarantee for the use of the universals in the new matter is the new whole itself. I do not see how we can avoid accepting what Meinong calls "das Prinzip der Unabhängigkeit des Soseins vom Sein,"[1] and thus Daseinsfreiheit, as a characteristic of certain objects of thought. Meinong argues, that while it is true that every Gegenstand is connected with existence in space and time in regard to what he calls "das Vorbestimmtsein von Gegenständen durch ein Wirkliches," yet "Der so Vorbestimmte Gegenständ existiert darum keineswegs, und auch von seiner Nicht-existenz wird in dem betreffenden Urteil durchaus nicht gehandelt; das Urteil ist eben daseinsfrei". I should insist strongly on the necessity of some system of a determinate type as the basis of judgments. But in judging with reference to any such system, I should agree that we do not need to refer to the question of its relation to what actually exists in space and time.[2]

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[1] Meinong, *Über die Stellung d. Gegenstandstheorie*, etc., p. 38.

[2] In denying that all objects of thought must be ultimately real, I have used the word "real" in Bosanquet's sense. Whether such objects of thought are real in a wider sense, is considered below.

D.

We may proceed to a further determination of the nature of an object capable of being thought about. My purpose is to ask what can be said in general of objects which are capable (1) of setting thought to work investigating their further characteristics, and (2) of guiding thought in this investigation. By "thinking about an object" I shall here mean only "investigating the characteristics of".

I shall start from the standpoint indicated by Stout, in his papers on "The Object of Thought and Real Being,"[1] and on "The Nature of Judgment,"[2] though his object in these papers is different from mine. If truth and error are both to be possible as the result of thinking about an object, he points out, there must be an object present to thought (or before thought) whose characteristics as already known are not such that the object is known in its complete detail. That is to say, the object must be thought of as having certain characteristics which are not present to thought. But again, these further characteristics must be thought of as related to those already known, in the way in which alternative specifications of a generality are related to the generality. "I [must be] aware that an actual content having some specific nature is there, and that it is one of a group of possible alternatives."[3] So in the first paper, "Some real being as such is directly an object of consciousness; this real being is capable of alternative determinations".[4] So far as Stout's problems are concerned, this is enough. For he is asking a more general question than ours, namely as to the conditions enabling us to judge (so as to judge either truly or falsely) about any object, whether in judging about this object we have to go beyond the object itself, making actual experiments (as in the case where I hear a noise, and go out of my room to investigate), or whether we merely rest on the information already provided for us by the object itself (if that is possible). My problem concerns the latter of these two alternatives. I am asking if it is possible for an object of thought to be capable of providing (*a*) not sufficient information to tell us immediately all about itself, but (*b*) the sufficient ground for further determination of its characteristics.

If then there can be such an object, its characteristics must be such that (*a*) the object is known as having certain general characters, capable of alternative determinations, one or other of which it actually possesses; (*b*) its characters are sufficient to indicate to thought which of these alternative determinations it does possess.

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[1] *Arist. Soc. Proc.*, 1910-11.

[2] *Ibid.*, 1914-15.

[3] *Ibid.*, 1914-15, p. 338.

[4] *Ibid.*, 1910-11, p. 190.

Can we add (*c*) that these general characteristics must be sufficient to determine uniquely what further characteristics the object must possess? I do not think so. Provided by thinking we are able to reduce the number of possible alternatives, even though we cannot reduce them to one, we can say that the object has been capable of being thought about. If, for instance, in a problem in Arithmetic, we are told that a certain number possesses certain characteristics, we may begin by knowing that it is one of the infinite set of even numbers, and end by knowing that it is either 10 or 14 or 16. Such an object is not uniquely determined at the end, but it is more definite at the end than it was at the beginning; and this is enough for my purposes here. To take a case. If we are given that there are two positive whole numbers whose sum is 6, one being greater than the other, then, so far, there are various alternatives, for the further determination of which thought is needed. According to the first condition, one of the numbers might be anything from 1 to 5. But according to the second condition combined with the first, it is limited to either 1 or 2 on the one hand, or to 5 or 4 on the other. The combination of the two conditions then is the result of thinking, and leaves us with fewer alternatives than either of the conditions separately. If further we are told that the greater of the two numbers is an even number, we are able to determine both of the numbers uniquely; but this fact has not in any way altered the general nature of the object, so far as thought is concerned.[1]

Let us consider a general type suggested by the above problem. Suppose an object X is characterised by the general qualities A, B and C, each of which is capable, taken by itself, of a large number of alternative specifications. It is clear that X can be further determined by thought, if the result of considering X as being A and B and C enables us to reduce the total number of alternatives. One condition of this is, that A's, B's and C's alternatives should be all selected from some single field of alternatives. And again, A's alternatives must include only some, and exclude all the rest of these alternatives, and so for B's and C's. *E.g.*, suppose there are certain characters a, b, c . . . z, of which A is compatible with a, c, e, etc., and incompatible with the rest, while B is compatible with b, c, d, f, . . . and incompatible with the rest, and so for C, then we may be able to reduce the number of alternative possibilities as the result of thought. The object which contains A, B and C may be impossible, or it may be uniquely determined as k, or it may be determined as "l or m or n". In each of these cases it would have been an object capable of being thought about. It would only be incapable of providing further determination for thought if all and only the alternatives possible for A were possible for B and C. But thought might be necessary in order to see this.

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[1] If it be asked how A can have the predicate "*a* or *b*," the reply must be that this has been shown to be an improper question. If the judgment "A is *a* or *b*" is a legitimate inference from the system on which the judgment is based, then the judgment is true. It is true of A. But it is the whole judgment which is true of A, and this judgment does not contain a predicate which is a quality of A. Thought is thus rather a matter of inference than of judgment, if by judgment is meant characterising by applying predicates. The difficulties of the notion of substance-attribute, which have given so much trouble to the Logic of Bradley and Bosanquet, are due to the questionable resolution of the judgment S is P into a qualification of reality. They can only be avoided, I think, by the resolute acceptance of the view that, when we say "S is P," we are asserting *not* "*P*," but "S is P" of S. *Cf.* Latta, MIND, 89, p. 107.

For instance, if I am building a house, and am endeavouring to determine the position, size, and materials, supposing that my house has to fulfil certain conditions any one of which is relative to a number of alternative positions, sizes, etc., within certain limits (not necessarily a finite number), then by taking these conditions together I may be able to reduce these alternatives to a very restricted set. The conditions may render any house impossible, or may determine various possible houses, or only one. Here the house falls within actual reality, and the determination of the various alternatives falling under any one of the general conditions will depend on premises derived largely from actual data. But the same broad general description applies as to any theoretical problem of the above-mentioned type.

If, on the other hand, some of the conditions related to size only, some to position only, some to materials only, and if size, position, and materials could not be connected in any way, then thought could not get to work. This is a general condition in relation to problems of this type: that all the alternatives rendered possible must belong to one specific field. We need not here determine this condition any more broadly by saying that they must be all capable of falling under some generality G, of which they are alternatives belonging to the same *fundamentum divisionis* of G. *E.g.*, when I am investigating an object in the distance, and can say, that with the colour it has, it must be either a cow, or a horse, or a dress, etc., and being in the place it is, must be either, etc., the conditions here might render it easy to decide what the object was, but it would be no help to find the generality G, with *fundamentum divisionis* F, which would result in the alternatives cow, horse, dress, etc.[1] It is sufficient that as a result of combining the alternatives allowed by the various conditions, we should have a smaller number of alternatives than by taking any one characteristic alone.

We have not yet, of course, proceeded very far, but far enough, I think, to specify the questions which must be answered before we can determine whether an object of thought which satisfies the above conditions can provide a sufficient ground for thought. The main question which will be asked is, What is the nature of a characteristic, say A, if it is to be such as to give rise to the judgment "A is either *a* or *b* or *c*"; or, using the word "generality," as Stout does, to describe a characteristic which is capable of further specification in alternative ways, What is the nature of a generality? And arising out of this, Of what type is the judgment, "A is either *a* or *b* or *c*," and on what grounds is it based? Is it self-evident? Or, to put it differently, Of what type is the judgment which determines that a generality is capable of certain alternative specifications? I shall consider these two questions together, and shall suggest only tentative answers.

In the first place, generalities are suggested by definite wholes met with in perceptual experience. And the basis of all our thinking in connexion with generalities, is to be found in the insight we have reached into the relation of the generality to its specifications in actual experience. Not that this insight can be given in actual experience, for it is by means of this very insight that we are able to understand our experience—even, it might be said, to discriminate certain differences as *the* differences between two wholes. You do not start by distinguishing yellow from red and blue, without any idea of the generality colour, and then go on in some way to discover that all these have something in which they agree. When an object is distinguished as red from another as blue, there is already an awareness of the generality colour. Our question then, is not that of how generalities are derived from particulars, for they are not so derived; nor even of how generalities are seen in relation to concrete wholes; our question is rather, admitting the presence of generalities in all our interpretation of experience, in what way the alternatives considered as falling under a given generality are related to the generality itself. And I should answer, that while the understanding of particular wholes in actual experience furnishes the clue to the nature of a generality and of the various alternatives of which the generality is capable, yet insight into the nature of the generality itself is the necessary foundation of the judgment that the generality is capable of such and such alternatives; and it is by no means necessary that all the alternatives should have been actually met with in experience. Starting with definite examples of a generality as a clue we may be able to see that the generality admits of a continuous set of alternative specifications, and so on. It is commonplace that most inventions depend on the perception of a possible alternative nowhere actually met with.

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[1] Though it is probable that in a purely theoretical case of this type such a condition would hold, *e.g.*, in the solution of geometrical problems by the method of intersection of loci, all the conditions determine points; in solutions by equations, the conditions determine numbers.

So much, I think, will be admitted by many who would insist that, in gaining insight into the nature of a generality and its alternatives, even though some of its alternatives may never have existed, we are not by any means enabled to cut ourselves free of reality in Bosanquet's limited sense. I have already tried to deal with this, and to give reasons why I am forced to think that our alternatives follow from the *nature* of the generality and not from its *reality*: the question of its reality being irrelevant to the ground of our thinking.

I do not think that this position is invalidated by the fact that in reasoning on a generality we may not have before the mind the whole nature of the generality, and that in order to realise its further nature we may have to go to actual experience. As Ward says,[1] in thinking of a generality, there is present to our thought only so much of the nature of the generality as is relevant to the problem or judgment under consideration. *E.g.*, in understanding the proposition "A stands in the relation R to B," we may not have to consider whether R is transitive, one-one, or symmetrical, etc. In considering whether from ARB we are entitled to infer BRA, we have not to consider whether R is transitive, or one-one, etc., but only whether it is symmetrical. As new needs arise, new characteristics of R may have to be thought of. And to enable us to think of these, it may be necessary to go back to the whole perceptual experiences from which R was torn (as James suggests).[2] But in all this we are resting ultimately on insight into the nature of R. The objection that this is to make simple intuition the basis of thinking, and that this is the rock to avoid,[3] I should meet by a simple denial. What we are resting on is insight into the nature of a system; only we are insisting that there are systems sufficient to rest this insight on, less than the whole of reality, and not falling entirely within the reality which results from the understanding of what is actual.

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[1] "Psychology," *Ency. Brit.*, vol. xxii., p. 591 (11th edition).

[2] *Psychology*, vol. i., p. 465.

[3] *Cf.* Bosanquet, *Logic*, ii., 236.

One result naturally leads out of this. Bosanquet insists that no whole short of the whole of reality can be a true individual, and hence no whole short of the whole of reality can be sufficient ground for a true judgment. In his defence of his position against criticism, he uses three criteria of individuality.[1] An individual must be self-contained, self-complete, and unique in the sense that it contains in itself the reason why there need not and cannot be another just the same. Now these, I would insist, may be the criteria of a real individual in Bosanquet's sense of reality, but I do not think they are criteria of a logical individual. To take the last condition first, a whole which is capable of being thought about need not be unique in the sense of being completely determined in all specific detail. It need not be thought of as so determined. An object X which sets thought a problem and guides thought to the result "X is either *a* or *b* or *c*," is a satisfactory object, so far as the truth of the judgment "X is either *a* or *b* or *c*" is concerned. It may not always satisfy our practical needs, but that is not the point. It follows that the second criterion, of self-completeness, does not apply, except relatively. The first criterion, of self-containedness, holds in the sense in which a generality with its alternative specifications is self-contained—in the sense namely, that it is the nature of such a generality on which we rest in the last resort, in understanding how its alternative specifications are possible for it; not in the sense, that we never need go to actual experience beyond such a generality in order to put ourselves in a position to get this understanding. We must distinguish between the process of gradually attaining insight, and the grounds on which this insight ultimately rests.[2]

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[1] Bosanquet, *Logic*, ii., ch. viii.

[2] According to Stout, *Arist. Soc. Proc.*, 1902-1903, the ultimate subject of judgment must be concrete, in two senses. It must be self-existent as compared with its partial aspects. And again, it must not be a partial feature of anything else. "Concreteness is underived particularity." I defer consideration of this for another occasion; but it will be seen that I should differ from him as to the second condition. On my view a true logical individual can be a partial feature of other things. This is bound up with the view expressed above regarding universals (page 439). On Stout's view the question arises as to whether possibilities, with their alternative determinations, can be ultimate subjects of judgment. If so,

Is a logical whole necessarily teleological? If what we have already said is correct, the answer to this question follows. A logical whole must of course be sufficient to enable us to understand its nature, and the way in which its constituents are related to it, but it need not be, nor be conceived as, purposive. It must be purposive, according to Bosanquet, because otherwise our purposiveness in judging about it—even in selecting it for judging about—will be external to its nature. This consideration appears irrelevant. Our purpose in selecting it for consideration may be what you will: this does not affect the truth of the judgments we may make about it. The judgments we make about it, which are guided by the general purpose of understanding its nature, may be determined by special interests; that again is irrelevant to their truth or falsity. Our purpose, I should contend, may enter, but it is irrelevant to truth. I am aware that this is within a large field of controversy. But in relation to this controversy I should take up the general position that purposive judgments all rest on non-purposive judgments. Again, I should insist that if purposive judgments (in the limited sense of judgments made in the interest of practical activity) are to be genuinely possible, there must be systems which can genuinely give rise to non-purposive judgments of the type "S may be either *p* or *q* or *r*," without determining which of these alternatives is to be the actual one. Purposive action seems to be essentially action for the sake of determining such a system as, say, *p* rather than *q* or *r*. But it would not be possible to discuss this question here.

they must, it would seem, be concrete in Stout's sense. And this they do not seem to be. Yet he appears to agree that generalities can be legitimate grounds of judgments regarding their alternative possibilities. (*E.g.*, MIND, 1908, p. 22.) Another difficulty I have is this: If such possibilities *are* ultimate subjects of judgment, they must, on his view, be individualised by reference to our immediate psychic state. When I think of a possibility and its alternative determinations, there must be in my mind some presentation (sensory, imaginal, or non-imaginal) which directs my thought uniquely to this object. If the presentation were different, the object thought of would be different. (MIND, Jan., 1911, etc.) But he seems to admit (*Arist. Soc. Proc.*, 1902-1903, p. 9) that with the same sensory and imaginal elements we could mean a different object in two cases. The difference of presentation here would be non-imaginal. Non-imaginal presentations would be the rule, rather than the exception, in relation to generalities. But I cannot help feeling that it would be preferable to say with Husserl (*Log. Untersuch.*, ii., p. 109, 130) that we must regard the act of meaning as a specific act which is based on, but not wholly determined in direction by, presentational elements. But the whole question demands a full discussion.

E.

We have spoken of a type of object of thought which is not real in Bosanquet's sense of the word; and our problem now is, to determine whether or in what sense we can speak of objects of thought of this type as real.

It must first be noted that in certain points, thought has precisely the same relation to such an object of thought as it has to what is actual. In the first place, it is set over against thought, as something which has determinations, which thought has to discover. It constrains thought. In other words, it is objective in the sense that its properties are related to it in a way which excludes any arbitrary dealings with it on the part of thought. This is sometimes interpreted as meaning that its being cannot consist in its being thought by particular thinkers. The precise sense in which this is so, we shall have to discuss later. In the second place, it is not exclusive to any individual thinker. It is an identical reference, something to which all thinkers can refer. It may be held, in the third place, that the question as to whether and in what sense it is independent of thought altogether has exactly the same significance, and is discussed by the same arguments as the parallel question in regard to existence in space and time. But this is perhaps not the case. For there may turn out to be two senses of the word independence, in both of which senses actual existence is independent of thought, while non-existent objects of thought have only the one kind of independence. Non-existent objects might be independent of thought only in the sense of constraint and identical reference, while actual existents might be independent in a further sense. It is then perhaps better to consider only the first two points.

Thus we can conclude that, whether real or not in the sense in which actual existence is real, the object of thought of the type under discussion has in certain important respects precisely the same relations to thought as actual existence has. Does the fact that the object of thought has these relations to thought entitle us to say that the object of thought has being or reality in some sense apart from thought? The real has just these relations: they are an important part of what we mean by reality. But if it turns out that there are many differences between what actually exists and such objects of thought, are their points of identity of sufficient importance to warrant us in classing them both under the head "being," with the explicit connotation of constraint, identical reference, and (possibly) independence, and in going on to think of this being as ontological? What are we to mean by "ontological being" here? Are we to think of it as identical with the being at which we arrive when we think of existence, abstracting from its time and space character? What is actual exists in space and time: we can represent to ourselves that it has a character which is separable in thought from the nature of space and time. And we can call this quality by the name being, by which we do not mean merely its "subsistence" as an object of thought for some thinker. We may, perhaps, help ourselves by the analogy of a thin, tenuous substance, what exists in space and time being thicker, muddier, perhaps. And after having passed beyond this materialistic way of looking at substance, we may come to realise the notion of substance not merely as a logical function, but as ontological. Having arrived at the conception of "being" in this way—being as ontological substance—can we go on to identify it with the conception of "being" arrived at from a consideration of the relation of thought to its objects (being as a logical function)? This is a course which presents difficulties.

My main difficulty is that I do not think it will help us to understand the relation of thought to its objects. Being as a logical function is all we can use here; and to think of this being as also an ontological substance adds nothing in this connexion. This may be brought out by a consideration of certain points in Stout's view. On his view, generalities are real *per se*; and this involves the reality, in the same sense in which actual existence is real, of all the possible alternative determinations of these generalities. And on the other hand, generalities are inconceivable except in relation to particular existence; thus we can speak of the one system of universal reality, which includes particular existence, and hence generalities, and hence all the possible alternative determinations of these generalities.

A question arises in connexion with this view. If truth and error are to be possible in relation to an object of thought, we have seen that on Stout's view, which we accepted, the object must be present to thought as a generality capable of having alternative possible determinations, and must also be thought of as actually having some one or other of these determinations.[1] For our belief to be true or false, we must believe that "an alternative possibility is the fulfilled one".[1] How shall we interpret this phrase? Stout's indications are not perfectly unambiguous. He speaks of an alternative as agreeing or disagreeing with "the reality to which the mind itself refers as its standard in the act of believing, as what requires to be specified in some determinate way".[2] This reality is thought of "as being determined in a certain way among other possible ways, but the determinate reality itself is not apprehended in its determinations".[3] Again, this reference "is in general not merely to the real universe as a whole, but to some special portion or aspect of it, which, if it is not determined in the way we believe, must be determined in some alternative way".[4] And if we add to these passages the passage in which the various modes of being are spoken of as being all "inconceivable except in correlation with each other," as having "being within the one system of universal reality," "as being an integral part or aspect of this reality,"[5] then it would seem that what thought is endeavouring to understand is some special portion or aspect of the one system of universal reality, with whose definition thought has nothing to do. But this I think would be a mistake if it meant that thought *has had* nothing to do with the determination of the special aspect of reality under consideration. The result needs to be given careful interpretation if the position is to be made clear.

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[1] On the view expressed in this paper, of course, an alternative "*a* or *b*" would be considered as being as much an actual determination of an object as a definite "*a*". The object of thought, that is, need not be uniquely determined. Stout would not agree with this.

What is the difference between a possible alternative and a fulfilled alternative? For all alternative possibilities *are*. They are real. They "fall within" reality. This however does not mean that they are alternative possibilities of reality as a whole. They *are* only as predicable of the generality of which they are alternative possibilities.[6]

What then are we to say of a fulfilled alternative? A fulfilled alternative on its side is relative not to reality as a whole, but to some aspect of reality. Thus "this is an alternative possibility in relation to the generality G" may be true. But "this is *the* alternative possibility—the fulfilled alternative—of the generality G in relation to the determinate system S" may be false. If then our object of thought is the system S, then, in relation to this system regarded merely as containing the generality G, various alternatives are possible: but in relation to the system S taken in its determinateness, only one alternative is possible. Now the important point is, that *the onus of determining the system S falls upon thought, and not upon reality.*[1]

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[1] *Arist. Soc. Proc.*, 1910-11, p. 195.

[2] *Ibid.*, p. 196.

[3] *Ibid* , p. 195.

[4] *Ibid.*, p. 190.

[5] *Ibid.*, p. 194.

[6] *Ibid.*, p. 193.

I feel that Stout would agree to this, in view of his belief that within reality there are *all* possible modes of being, and that thought is relative to some aspect of reality. For thought must determine what aspect it is relative to in any given case. To speak, then, of an alternative as the fulfilled alternative, is to speak with reference to an object which thought itself has already determined in its completeness, although the principles by which thought has already determined this object may not be such as explicitly to determine it in all its details without a further development by thought.

Thus the objects which thought thinks about cannot be identified by appeal to the fact that they are real; but must be identified by being determined (over again if you will) by thought. And so far as I can see it cannot be because they are real that they exert compulsion, but because thought has determined them as so and so. In other words, even if the objects of thought are real apart from thought, still thought can only know which object it is dealing with by recreating it. But if this is so, then the compulsion and identical reference which are characteristic of the object of thought (being as a logical function) are not in any way explained by considering their being as ontological, as well as logical.

At this point two alternatives seem open to us. We may go resolutely forward, and take the characteristics of an object of thought of the type under consideration as the fundamental meaning of the word "real," and then review the various orders of reality in the light of this; connecting existence with being, rather than being with existence. This is the way of the new realists.

Or, on the other hand, we may decide that some objects of thought have being only for thought, and then the problem is to interpret this. We should have to find some meaning for the phrase "being for thought" different from the meaning given to it by Stout.[2] An object of thought could not be a "mental content" in the sense of the representationists. It would have to be regarded in some way as a meant object, the result of thought meaning this rather than that (in the active sense). But the problem here, with which I do not see my way to deal, would turn on the function performed by thought.

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[1] Even if alternative possibilities, such as G, are definitely involved in actual existence, still it is by no means clear that this is the case of the various systems S, about which we can judge. It is with systems such as S that we are now dealing, and this introduces a further difficulty.

[2] MIND, 1908, pp. 20-21.

But the difficulties raised by adopting the second alternative do not seem to be resolved by the adoption of the first. The realist has to explain the relation of object to thought as ultimate. The object is revealed to thought. Now this phrase is less intelligible in relation to an object of thought of the type under discussion than it is in relation to an object given in sense perception. For in the latter case thought is directed to the object by processes and characteristics which, *prima facie* at least, fall outside of thought itself. But in the former case, this is not so. Thought directs itself to the object it is to consider, by determining it in some respects; and it is forced to determine the object in a number of respects sufficient to guide it in the further determination of the object. But if this initial determination of the object falls wholly on thought, and if these initial determinations are to be the sole ground for thought's further dealings with the object, where is the place for the decision that the object falls beyond thought, so as to be real independently of thought, and to reveal itself to thought?

The difficulty we are considering does not arise for Bosanquet, since on his view the objects of thought we have been dealing with are not genuine objects of thought. But I find myself unable either to deny their genuineness or to solve the problem to which the admission of their genuineness gives rise.

There is, however, another set of considerations, by which we might be led to conclude that any object of thought is real in precisely the same sense as actual existence is real. The objects of thought we are considering consist, it will be remembered, of systems of generalities and their alternative determinations. All the generalities of which human thinkers can be aware have been derived from a consideration of actual existence; although not all their possible alternatives need have been there met with. It seems obvious that the particular alternative determinations of these generalities which actually exist, are real. Thereupon two questions arise. Does this apparently obvious fact necessitate, in the first place, that the generalities are real in precisely the same sense in which their actual alternative determinations are real? The answer to this question depends on whether we regard what actually exists as truly described, when it is described as the alternative determination of some generality: which would be answered in very different ways by modern philosophers. Stout's argument involves an affirmative answer. Some philosophers would insist that all generalities are conceptual fictions; others would hold that only some generalities are genuine concepts, most classes or kinds having only practical and not truth-value, being only pseudo-concepts. But supposing the question be answered in the affirmative, then a second question arises. Generalities are real, in the same sense as actual existence; but are *all* their possible alternatives real in this sense, or only such alternatives as are actual? And this question makes us go back to our previous question, and introduce a distinction. When we decided that generalities were real, as actual existence is, did we mean, generalities *per se*, or only generalities considered in relation to actual existence? Granting with Stout that generalities must be real if particular existence is to be thought, we must still decide this further point. For while generalities, considered *per se*, are capable of being thought as having other determinations than those which actually exist, yet, if generalities are considered as essentially in relation to particular existences, they must be recognised as really having only those determinations which actually exist. And it may be asked whether this last is a possible contention. Would the consequence follow, which has been so often drawn, that kinds are thus not real at all, even in relation to particular existence, but only creations or fictions of thought? Can we, in short, avoid the alternatives, either generalities are not real at all, or they are real *per se*, and hence all their alternative determinations are real? Is it possible to hold on the contrary that generalities if considered only as having such alternative determinations as exist, are real, but that, if generalities are considered as having all the alternative determinations which thought can specify, then they are only fictions or creations of thought? And again, even if generalities with all their alternative determinations were regarded as real, would this involve the reality of all constructed systems composed of various generalities? I cannot at present see any way of deciding these important questions, apart from the considerations already mentioned, as to the logical functions of being. And these considerations, I have tried to show, do not help us.

Another way may be tried, of asking what characteristics actual existence can have in respect to its ontological being, which the object of thought has not. And here many answers will be given. It may be said that the ontological being of what exists consists in its activity, and in its continuance; and that thus "eternal being," *i.e.*, being apart from time and space, is inconceivable. And if this be accepted, then objects of thought which are merely ideal cannot have ontological being. On the other side it may be said that of this activity we can have no conception; or again, if we can conceive it, it involves the notion of identities which are not themselves time and space conditioned, and are to be considered as having ontological being. But in all this we are passing to a point of view which is not distinctively logical, and which, however we may finally decide, does not directly help us with the strictly logical problem.

V.—DISCUSSIONS.

LOGIC AND FORMALISM.

Dr. Schiller, who is universally regarded as the most formidable opponent of formal logic, has (in No. 106) commented briefly on the views expressed by me, and (in No. 104) criticised at considerable length those of Mr. Pickard-Cambridge, which are, I have every reason to believe, practically identical with my own.[1] I propose to reply briefly to both contributions.

Dr. Schiller's remarks on what he calls my concessions and his opinion that my defence of logic is more damaging than his attack call for some comment and perhaps for a little further explanation. I will endeavour to make it clear that I have, from my own point of view, made no concessions whatever, and that I am entirely indifferent to whom or to what my remarks may be damaging. Personally Dr. Schiller and I have much in common, and (whether or no it is mutual I cannot say) there is on my side at least considerable sympathy. On certain matters of principle raised in this discussion, which appear to me to be philosophical rather than strictly logical, there is a fundamental and irreconcilable difference.

On the personal side I will say at once that the striking contrast between the powerful attack Dr. Schiller has made (in his book on logic) on present day logical theory and the general silence on the part of those attacked is in my opinion in every way creditable to Dr. Schiller. I, on the other hand, hold no brief for "logic as she is taught" nor for the multitudinous confusion with which modern logicians have enveloped and disguised what to me are a number of very simple and obvious principles. To that extent I am entirely satisfied that my remarks should be damaging. My concern here is solely for the principles themselves. Dr. Schiller should try to differentiate between his opponents and to deal with the case as it is put before him.

In his reply to me Dr. Schiller cannot be said to have done so and in particular he has in two glaring cases failed to appreciate the significance of the argument to which he replies. He appears to think that my antithesis between strictly formal logical reasoning and the rough and ready medley of practical life, partly empirical and instinctive, and partly reasoning good and bad, is entirely in favour of the practical product, and asks "but is it not the business of logic to set them right". In parliamentary parlance the answer is in the affirmative, nor have I at any time stated or implied the contrary. So far as in practical life we reach conclusions by invalid reasoning it is the business of logic to show that it *is* invalid. What I was endeavouring to make clear was that in practical reasoning, argument, discussion (call it what you will) there is a considerable element, empirical and instinctive, which is not capable of strict formalisation.

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[1] It must be clearly understood that I am claiming Mr. Pickard-Cambridge's agreement merely on the specific question of the use of a universal in reasoning, and, in a general way on the nature and functions of formal logic. Mr. Pickard-Cambridge is, of course, in no way committed to my special or personal views or claims, or to every argument or statement contained in this paper.

The practical man, doubtless, in a majority of cases "gets there," in a minority of cases he goes badly wrong. The point I was making was that it is not a true criticism of formal logic that it is unable to formalise that part of "getting there" of arriving at conclusions which is not in its essential nature formal. In this statement there is nothing damaging to formal logic, though there may be to writers on logic who fail to appreciate its limitations. I think this disposes of Dr. Schiller's "terrible misology". If he wishes to make that criticism he must at least condescend to examine the position in greater detail.

Dr. Schiller's comment on the scholastic position, and on my interpretation of it, is still more astounding. I do not pretend to be an authority on scholastic logic but the statement I put forward is most elementary and can be appreciated by an extremely casual study of the subject. That anyone writing a discussion in this journal should be so ignorant as to fail to appreciate the point put forward and should also neglect to obtain some information before disputing so simple a statement is incredible indeed. To repeat the statement: It is generally recognised among scholastic logicians that there is (*a*) a sphere of knowledge, called by them *certain* science, to which the methods of logic and deductive reasoning strictly apply, (*b*) a sphere of provisional or empirical knowledge to which the methods of formal logic are only partially applicable. It is the special standpoint of the schoolmen that knowledge (*a*) or certain knowledge is superior to knowledge (*b*) or provisional knowledge. If Dr. Schiller or anyone else contends that any branch of knowledge is of the empirical order, that contention, if established, *ipso facto* places it in the second or inferior category.[1]

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[1] The following quotation from Dr. Coffey's excellent text-book of logic shows the standpoint of the schoolmen fairly clearly :—

"Fourthly and finally the scholastic method counteracts the narrowing influence exerted on the mind by a constant and exclusive contact with the facts of sense, it nourishes in the soul what we may call the craving for the universal, the desire to grasp the idea in the fact, the abiding law in the contingent phenomenon. . . . Again the importance attached by scholasticism to *certain* science inclines its disciple to depreciate the value of the merely probable and provisional. To the scholastic mind the slowness of experimental work is irksome, it easily becomes impatient of the problematic character of most historical, sociological and economic

Nor can I understand how anyone can fail to appreciate a certain plausibility in the position. Let us take a very simple illustration. The truth that two and two make four can be placed in the first category. The truth that two raindrops plus two raindrops may in some circumstances make one raindrop undoubtedly comes in the second. Cannot Dr. Schiller see that there is a very powerful case for the metaphysical position that the first truth, a fundamental property of number, belonging to a sphere to which formal reasoning is strictly applicable, is superior to an empirical truth dependent upon the surface tension of liquids. I do not wish to be understood to be arguing for or against the scholastic position. But at least it will be generally agreed that there is no sufficient reason for denying validity and importance to strictly logical reasoning in the admission that there is a considerable sphere of practical life (or material truth) to which it can only be applied with caution and reserve. It would be as sensible to abolish elementary arithmetic because it is not invariably applicable to the properties of raindrops. As Dr. Schiller would put it the material fact that two articles plus two articles make four articles "has to come independently and empirically" and the truth that two and two make four "can at most guide expectation". What therefore according to Dr. Schiller becomes of simple arithmetic? Anyone who has been confused by Dr. Schiller's brief remarks will now begin to see that the "dualism between logic and common sense" is not altogether absurd.

A few words are now needed concerning Dr. Schiller's lengthy comment on Mr. Pickard-Cambridge. This particular discussion has puzzled both Mr. Pickard-Cambridge and myself not so much concerning the view that Dr. Schiller was trying to express but in

inductions and of the many reserves with which the materials of the special sciences must be employed" (vol. ii., pp. 20-21).

The context of the passage quoted is even more striking than the quotation itself, for Dr. Coffey is here arguing that the principle should not be pressed too far and that the inductive sciences and their methods really are worth studying, notwithstanding the absence of "certainty".

The standpoint of the same work towards the relation between formal validity and truth certainty is also interesting.

"We have now completed an examination of the *formal* aspect of the reasoning process, and of the rules that guarantee its formal correctness or validity. But the object of all reasoning, of all science and philosophy in fact, is to arrive at a *certain* knowledge of *truth;* and, to secure this it is not enough that our reasoning processes be correct and valid formally, the judgments involved in them must furthermore be both true and certain. . . .

"Our next concern is to enquire how we reach true judgments especially those true *universal* judgments which constitute *scientific* knowledge. . . . This part of logical doctrine is variously described as applied logic, methodology and the science of logical method."

Dr. Coffey's book can be strongly recommended to those wishing to study this subject, and is, in my opinion, a better presentation of logic than any modern text-book, notwithstanding the fact that some portions of it will not be acceptable to anyone but a Catholic.

what way it was applicable to anything Mr. Pickard-Cambridge or myself had ever said or written. Indeed I think Dr. Schiller has rendered this discussion somewhat unreal and his method is hardly fair either to Mr. Pickard-Cambridge or to myself. The position briefly is this. Mr. Pickard-Cambridge and I are, in essentials, fully in agreement. Against us are two opponents, Dr. Mercier and Dr. Schiller, who disagree strikingly among themselves. The task of replying to Dr. Mercier on the question of the use of a universal in reasoning I have been fully content to leave to Mr. Pickard-Cambridge with whom on this matter I unreservedly identify myself and fully agree with the general trend of his argument. On the other hand, Dr. Schiller is concerned for the pragmatist philosophy, and attacks *in toto* the idea of formal validity. Dr. Schiller's standpoint is exceedingly puzzling to anyone not fully conversant with his views, consequently I have made it my special business to reply to him. Dr. Schiller, therefore, should address his remarks to me instead of commenting profusely on some one who confessedly does not understand him and who was dealing, very ably indeed, with something quite different. In his brief acknowledgment of Dr. Schiller, Mr. Pickard-Cambridge (I am sure he will excuse me for expressing a candid opinion) seems to me to have been trapped into a slight ambiguity. Dr. Schiller thereupon occupies eight pages of MIND in pointing out that the ambiguity is ambiguous and greatly puzzles both of us to discover exactly what his eight pages are supposed to prove. Perhaps I may be permitted slightly to amend one remark Mr. Pickard-Cambridge made (No. 102, p. 213) and to say that the argument A is next to B, B is next to C therefore A is next but one to C is *formally invalid*.[1] The statement may sometimes be true and sometimes false, but the conclusion is a *non-sequitur*. It seems to me that with this slight emendation Dr. Schiller's eight pages become entirely irrelevant, and that, so far as Mr. Pickard-Cambridge is concerned, no further reply is needed.

I will now deal somewhat more fully with the contention that "no reasoning, no strictly logical argument, is in itself a guarantee of material or empirical truth". On this point Dr. Schiller, Mr. Pickard-Cambridge and myself are in entire agreement. Mr. Pickard-Cambridge and I were both of opinion that it was one of the commonly accepted truisms of logicians. We are, moreover, both of us in agreement concerning the important distinction between the validity of a logical inference and the material truth of its application. As I have previously argued, the analogy of mathematics holds precisely. Dr. Schiller, however, contends that the difference is "that the mathematician recognises that there is a question of the *application* of pure mathematics to physical reality, while the logician has not seen that there is an analogous question whether *any* logical form applies to *any* reality". The italicised *any* is somewhat ambiguous but I take it that Dr. Schiller means material truth. If I accepted his antithesis fully, the only possible comment would be: so much the worse for the logician, but the principle is not affected. As a matter of fact, however, neither part of Dr. Schiller's statement is more than partially true. The mathematician who is also a man of science is obliged to recognise the problem in a partial and halting manner because he so often finds himself at variance with facts if he fails to do so. The pure mathematician recognises the principle still less. But, as I have shown on several occasions, even the scientific mathematician recognises it only partially and intermittently. In consequence he is continually spinning cobwebs which the man of common sense has to sweep away. As instances of this I will only mention the nonsense written in the last generation about the dissipation of energy, and the scarcely more tolerable stuff written by present day exponents of the principle of relativity, and by mathematicians (and Dr. Schiller) about metageometry.

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[1] This question raised by Dr. Schiller about multiplicity of logical forms seems to me very simple and I am dealing with it in the appendix to the article.

I fully expected to find Dr. Schiller wrong in his statement about logicians, indeed I have already shown that it does not apply to present day scholastic logic. With regard to the modern logician, on referring to a few works on logic, I find their philosophical basis so confused that I am bound to admit that Dr. Schiller's sweeping statement is not altogether unjust. Indeed, from a hurried and cursory glance through text-books on logic, neither Mr. Pickard-Cambridge nor myself have found a statement quite explicit and adequate.[1] At the same time the notion that no logical argument is in itself a guarantee of material truth is so familiar to me that I think it must be found somewhere in a clear philosophical statement. To the extent that I have not been anticipated, however, I must claim the discovery for myself,[2] and I can certainly claim the credit of stating the truth clearly and explicitly, and of pointing out that if it is so recognised the classification of material fallacies is immediately clarified, as is also that very tedious and absurd controversy on existential import. The main thesis I thought was common property and undisputed and merely took to myself the credit of stating it a little more logically than had been done before. I did not, therefore, attach much importance to that paper, especially as it was to me but a side-issue arising from previous investigations on the philosophy of applied mathematics. The only aspect on which I laid stress was the treatment of material fallacies. My own opinion of its value appeared to coincide exactly with that of other logicians, none of whom took any notice of it. It would appear, however, if Dr. Schiller's statement is correct, and I find myself unable to controvert it, that I have, so far as modern logic is concerned, made an important discovery. Academic logicians, therefore, it seems to me, in view of Dr. Schiller's statement, are now under an obligation to define their position and to say to what extent they agree or disagree. I, at least, have stated my position clearly.

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[1] The best I have found up to the present have both been pointed out to me by Mr. Pickard-Cambridge. They are Carveth Reid, *Logic Deductive and Inductive*, p. 102, and Joseph, *Introduction to Logic*, p. 342. Neither is quite sufficiently clear and adequate to be worth quoting in full. A study of Jevons and Venn would probably give some relevant passages. Dr. Keynes (*Formal Logic*, p. 2) also recognises the principle. I agree, however, with Dr. Schiller that present day logicians do not observe it consistently.

[2] See "A Theory of Material Fallacies," *Proc. Aristotelian Society*, 1911-12, also MIND, January, 1912.

From the philosophical point of view, which, I think we shall agree, is the one that really matters, it is important to point out to Dr. Schiller that with the full acceptance of my principle the greater part of his criticisms on formal logic, as apart from the vagaries of present-day logicians, are invalidated. There is, of course, room for discussion of the place and value of logic on grounds of utility, but none on grounds of principle. The meaning of formal validity is clear and unequivocal. Logic becomes a purely conceptual science like mathematics. The formal validity of a syllogism becomes precisely similar to that of the binomial theorem. The whole structure of inferential and syllogistic logic remains untouched. There is room also for forms of logical reasoning other than the syllogism, if once it is clearly recognised that their validity depends entirely on the absolute axiomatic truth of the universal (expressed or implied) on which they rest.

To conclude this discussion I will put to Dr. Schiller a metaphysical problem. It is his position that formal validity does not in fact exist. What then does he make of the rigidity of the reasoning process? Let us take as an example the instance he is himself so fond of quoting—euclidean geometry. We will put on one side the controversy concerning the nature of axioms in which both of us have from time to time taken part and concerning which our differences are at least intelligible. Let us concentrate on the process of deduction. There are differences of opinion concerning the kind of truth expressed by the postulates and axioms. But not even Dr. Schiller has doubted that, granting the postulates and axioms, the proposition that the three angles of a triangle are equal to two right angles inevitably follows. Why? No one knows better than Dr. Schiller that the euclidean concepts do not exist as material facts, and that empirically the proposition can be shown to be true only approximately. What then is the nature of our certainty of the *nexus* connecting the proposition and its ultimate premises? I will put the question, or a part of it, in a more striking manner. Let us assume the majority of the postulates and axioms and consider only the axiom of parallels. Granting the axiom of parallels, in Euclid's, Playfair's or any other form, there follows the proposition concerning the sum of the three angles of a triangle. Modifying that axiom in the slightest, there follows a corresponding difference in the sum of the angles of the triangle. Empirically, both the axiom and the proposition can be verified approximately by actual measurement, in each case only approximately. Empirically, the verification is not sufficiently exact to enable us to deny definitely Riemann's or any other peculiar mathematical "space". But the axiom and the conclusion here labour under precisely the same limitations. Neither can be proved exactly by empirical measurement. Why therefore is it not possible to say that the axiom of parallels and Riemann's space may both be true at the same time, or that the truth of the axiom of parallels may coincide with the falsity of the triangle proposition. Both statements are intrinsically absurd, but neither can be disproved empirically. What then is the precise nature of the indisputable connexion between the euclidean axiom and the euclidean proposition? Dr. Schiller does not deny its existence, but how on his philosophical basis can it be explained? If we reject the obvious and traditional explanation that the series of inferences is an instance of absolute formal validity, which explanation is at least clear and explanatory, what alternative theory is possible?

H. S. SHELTON.

Appendix on Logical Forms.

I have previously stated that I regard the inference A is next to B, B is next to C, A is next but one to C, formally invalid. A word of explanation is desirable. It is, of course, possible by taking sufficient premises to obtain the conclusion, *e.g.*, from the premises:—

(1) A is next to B.
(2) B is next to C.
(3) A, B, C, are in the same linear series.

(4) (explanation) "next" refers to order only not to proximity, there is no doubt that the conclusion A is next but one to B necessarily follows. But it would be absurd to call this a valid form because there is no recognisable form and the argument is complex. At the same time, if there is any sufficient object to be gained, it is possible to manufacture additional forms *ad infinitum.* The method is as follows: First obtain some axiom or universal which can be regarded as absolutely true. "Things that are equal to the same thing are equal to one another" will suit our purpose very well. Next translate that axiom into symbolic form:—

A is equal to B
C is equal to B
therefore A is equal to C.

It will be seen that the meaning is practically identical. Two things (A, C) which are equal to the same thing (B) are equal to one another (A is equal to C). Thereupon, substitute anything you please for A, B, C. The argument is no more a syllogism than the *a fortiori*. There are five terms, etc. It is undoubtedly valid. It is also clearly an inference. The truth that A is equal to C is obtained mediately as a consequence of the first two propositions. Therefore in a sense it can be called a valid form. And in this sense there can be innumerable valid forms, or at least a very large number. The objection to creating so large a number is equally clear. Every such argument can be expressed as a syllogism, therefore they are unnecessary. Also they are unsafe, for this reason. The validity depends entirely on the assertion that the universal from which the form is derived is *absolutely true*. Otherwise the form is not even formally valid. It is therefore, I think, much better, as a rule, to state the argument in a syllogism and in so doing state the universal explicitly. We thus avoid a very inconvenient confusion of formal validity and material truth. Nevertheless it is as well to recognise that the multiplication of logical forms is in a sense possible. To this extent Mr. Pickard-Cambridge was right in splitting up the ambiguous argument into two or more. Dr. Schiller has shown the kind of criticism to which the process is open. Therefore I should prefer to state the conclusion that, while when the syllogistic form seems unusually strained there is no insuperable objection to creating a new form, there is at present no sufficient reason for so doing in view of the difficulty of ensuring that so great a multiplicitly of axioms are absolutely true. Moreover, it should be distinctly recognised that every such form definitely rests on the assertion of the truth of a universal. If the universal is not universally true the form is not absolutely valid, which is equivalent to saying it is invalid.

H. S. S.

P.S.—There are some points in this appendix which are, I think, new to modern logical theory and which cannot be dealt with in an appendix to a discussion. I hope to elaborate them more fully very shortly and will ask readers to regard this statement as a brief preliminary note.

WHAT DOES BERGSON MEAN BY PURE PERCEPTION?

Mr. Harward in the April number, page 203, tells us that he finds it difficult to assign any precise meaning to a passage of *Matter and Memory* (pp. 26-30) in which Bergson considers "how conscious perception may be explained". I am one of those to whom this passage seems not only precise but luminous. I may be wrong both in my interpretation of Bergson and also in my own view so far as I find it expressed in this passage, but pending an authoritative reply, supposing M. Bergson feels drawn to offer one, it may be useful if I try and state what I understand the doctrine to be.

Bergson affirms that the objects of external perception are images. Images are not things in the common-sense meaning, neither are they matter in the scientific meaning. The in-itselfness which forms part of the common-sense notion of a thing and of the postulated reality of physical science does not pertain to the image. Yet images are not in the mind nor projected from the mind; they exist where and when the mind perceives them. Images are not the whole reality and reality is not an aggregation of images. Reality is duration and images are a selection within, and a contraction of, duration. The activity which selects and contracts is memory. Without memory there would be no images; without images there would be no perception. In experience there is neither "pure" perception nor "pure" memory, the notion of each is theoretical and corresponds one to a notion of pure matter, the other to a notion of pure mind.

This theory of perception raises many philosophical problems and cannot be wholly dissociated from metaphysical theories of space and time and reality in general. Yet taken in itself it seems to me clear enough in its distinction from realist theories on the one hand which make perception "diaphanous," and present it as an external relation of awareness, the sole condition of which is the compresence of two objects, one of them a mind, in an absolute space at an absolute instant; and from idealist theories on the other hand which identify *esse* and *percipi*. Conscious percipients are "centres of indetermination"; conscious perception is their exercise of selection and contraction. Were there no selection, were we conscious of all the influences at every moment acting upon us, we should be theoretically perceiving everything, practically perceiving nothing. Consciousness would be indistinguishable from unconsciousness. Were there no contraction, there would be no definite objects with distinct outlines. Were there neither selection nor contraction there would be no images.

Mr. Harward asks,—What does Bergson mean by "pure" perception? The answer is that Bergson is using a precise mathematical concept, the concept of limit. Take an instant of conscious life, suppose memory entirely suppressed, so that the instant yields only the immediate experience it actually contains, you are conceiving the limit of materiality. At the limit there is neither selection nor contraction and consequently no image. Pure perception exists then only in theory, but it performs the kind of practical service which a limiting concept performs in mathematics. There is an infinite approach to it but we can never reach it.

The theory of the selection of images appears to offer no special difficulty to Mr. Harward, at any rate if it does he lets it pass, but it is otherwise with the theory of the formation of the image by the contraction of successive moments. It seems to me that in regard to this theory Mr. Harward has simply failed to understand, and the evidence of his failure is his treatment of Bergson's illustration of the physical theory of the composition of the light-waves. Thus Mr. Harward takes the red rays as the instance of concrete perception and proceeds to pose this question. Is the "pure" perception of this concrete perception red, the image in the ordinary common-sense meaning? Or, is the "pure" perception one individual of the 451 billion vibrations which according to scientific theory are propagated in one second at the red end of the spectrum? The mere fact that he can pose such a question shows that he has missed the point. He supposes Bergson to be seriously propounding something essentially silly, and he does not appear to see that irrespective of its silliness, it convicts Bergson in the passage quoted, if Mr. Harward's view is accepted, of laxity and confusion just when he is presumably intent on mathematical precision. He quotes him as saying that every concrete perception (and therefore of course the perception of red) is a synthesis of an *infinity* of "pure perceptions," and then interprets this as meaning that there is a *finite* number of "pure perceptions," namely 451 billion, in the concrete perception red.

The scientific theory of colour is not adduced by Bergson as an instance of a synthesis of pure perceptions in a concrete perception, and the obstacle to experiencing a pure perception is not "Exner's $\frac{1}{500}$th of a second". It is an illustration of contraction, not an illustration, certainly not an instance, of pure perception. Surely it is obvious that even were we able to realise the conditions in which we could perceive the vibrations in the spectrum we should be as far off as we are now from a pure perception. The obstacle to the experience of pure perception is that the image (and a single vibration is an image) is formed by memory.

What then is Bergson's point in using this illustration? He wants to explain tension. Take the case of red colour sensation. According to the physical theory the condition of this sensation is the propagation of 451 billion vibrations per second and the smallest part of a second in which I can distinguish sensations is the $\frac{1}{500}$th. Let us accept the figures. What then? Colour sensation depends physically on the number of these vibrations contracted into our psychical moment of duration. Vary the number and we vary the colour. Precisely, says Bergson, but is there not also another way in which we could attain the same result? Suppose we relax the psychical tension. Suppose that without the physical rhythm of the propagation altering at all our grasp on it is relaxed, so that our tension extends. Must we not suppose that the effect would be precisely the same? The colour would change and finally disappear with the approach to the limit of coincidence with pure vibrations.

The essence of the *explanation* Bergson offers of conscious perception is that the selection and contraction which determine the matter and form of the images are strictly relative to the actions which we are organised to perform and the performance of which constitutes our life cycle. To conscious percipients organised for other actions than ours, perception is different to ours, different in its matter and different in its form, even though we adopt the view of physical science that physical reality is identical for all percipients. What in each case constitutes the image is the selection and contraction which memory effects. By memory in this connexion is meant, not reminiscence but, the spiritual activity which prolongs the past into the present.

H. WILDON CARR.

VI.—CRITICAL NOTICES.

Logic as the Science of the Pure Concept. Translated from the Italian of BENEDETTO CROCE by DOUGLAS AINSLIE, B.A. (Oxon), M.R.A.S. Macmillan, 1917. Pp. xxxiii, 606. 14s. net.

CROCE'S Logic was first published in its present form in 1909, and is now translated[1] from the third edition. An interesting preface, dated 1916, emphasises the essential point of his logical doctrine, I had almost said its essential paradox, that is, the identification of philosophy and history, and the rejection of metaphysics.

In attempting to appreciate this brilliant work, which no one I think can study without learning very much from it, I shall take the simple course of discussing the two questions which have forced themselves as obvious upon my own mind, and the second of which in particular is at first sight hard to answer. They are these. What, to begin with, does Croce offer in the way of logical doctrine? And in the second place, why does he offer no more than this?

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[1] *Note on the Translation.* — The translation is on the whole fairly serviceable, especially for anyone who has the original at hand to refer to in suspicious passages. The English student will be grateful for it, and I know how hard it is to avoid errors in translating. But besides actual mistakes, which, though serious, are not very numerous, there is a good deal of laxity. I do not suspect the translator's knowledge of Italian; it rather looks to me as if he did not appreciate the inconvenience of expressions that lack precision in a logical treatise. I feel bound to give a few instances, to indicate that the English reader, who can work with the Italian text at all, should always have it beside him in using the translation.

Not to speak of "Phœnician Araby" for "the Arabian Phœnix" on page 51, we find on page 142 "the logical deduction *of* (my italics) the figures of the syllogism which it (verbal Logic) makes *from* (my italics) a series of moods recognised as not conclusive". Of course the "of" and "from" are transposed by a confusion of "da" and "di," and the sentence is turned into nonsense. On page 160 "Caio è mortale" is turned into "Caius is dead," and the sentence calmly continues "since it is not possible to affirm *that he is mortal* (correct translation, my italics) without some reason". On p. 176 the text runs "this formula (Something is) would no longer be an individual judgment, since . . . every individual determination of the universal would not have been excluded". Of course the meaning is "would have been excluded from it". "Ne" meaning "from it" has apparently been taken for a negative particle. The translation of "conoscenza" (rendered "acquaintance" in some passages) on pages 247 and 249 by "knowledge," which is also used for "sapere," is bewildering to anyone who has not the original before him. The headlines throughout the book do not give the information which is given by those in the original. If these are too long for the English page, they might easily have been modified. The index is not reproduced. As it is of proper names only, surely it would have been well not only to reproduce, but to enlarge it.

First then, I will try to summarise what he actually tells us about Logic.

(i.) The object of Logic is the "pure concept" ("concetto puro"). The word "concept" does not matter; perhaps "notion," with an echo of Hegel's usage, would have had a less subjective ring to the English ear. Of course we are not to think of conceptualism. The pure concept is the logical element by which, in a spiritual act of an *a priori* synthesis, intuition or presentation ("rappresentazione") passes into knowledge of the real. Such knowledge is embodied in the individual judgment, at once historical and philosophical. This "concept" is of the nature of a category. It has reality only in presentations, is implied in every presentation, but is exhausted in no number of these. It is the only true universal, and in its unity in distinctions—in such forms as beauty, truth, goodness—reality has its being. And Logic, strictly speaking, considers nothing else than this.

From it are sharply distinguished, as empirical and abstract concepts—pseudo-concepts or conceptual fictions—our ordinary class-notions of concrete things or of geometrical figures. The former are based on arbitrary groupings of presentations, and thus contain something of reality, but are not universal. To the latter no presentations correspond; they are not real, therefore, but universal, though only with a feigned universality, a universality without concreteness (369). Both are formations posterior to the pure concept; that is to say, the category is not generalised from experience, but is present in its genesis, and these common notions are formed from true individual judgments by classification and its kindred developments, enumeration and abstraction.

Thus the world of ordinary general notions or pseudo-concepts, with the methods instrumental to them—classification, enumeration, abstraction—and the judgments and sciences to which they give rise, the natural sciences and mathematics, are practical artifices not concerned with truth, and fall outside the province of Logic. The presence of necessity or implication working even in the classificatory or enumerative judgment seems wholly ignored or denied. Logic recognises as its object only the unity in distinction of those true concrete universals which live in all actual reality and are exhausted by none; and these are categories.

Then is Logic, for Croce as for Hegel, the deduction of the whole chain of categories as constituting the soul of reality? Not so. Logic deals only with the concept of the concept, the concept of logical thought; that is to say, with the system of judgment, concept, and syllogism, which is for him a single thing. He recognises no general or total reality and so no general philosophy—no metaphysic—which could consider particular categories as steps in such a reality. Therefore Logic, the philosophy of philosophy, does not transcend its own limits as the philosophy of knowledge. The philosophy of philosophy is a section within philosophy; it is not in addition the philosophy of beauty or goodness. It is rather as if we had before us Hegel's logical system cut down to the "subjective logic". But of this again the greater part would be rejected by Croce's treatment.

(ii.) The "pure concept" has its only true form in the individual judgment, in which an intuition (presentation) is subject and a concept predicate. This is the same thing as the judgment of perception; and this again includes the historical judgment, which is at bottom a determination of a present intuition by a concept which qualifies it, since the past is lived in unity with the present. This judgment marks the passage from imagination or pure expression—language,[1] which is one with art—to the affirmation of reality. It is the fundamental fact for Logic, and is the only judgment that is complete and original.

For here we meet the paradox that history is philosophy; they are one and the same thing, though distinguishable by an abstraction of aspects. A complete philosophy would be nothing more nor less than a perfect history, though, as reality is history, neither can ever reach a full stop.

The explanation of this doctrine is most easily drawn from the note on page 327 in which Croce narrates its genesis. The point is, in a word, that history and philosophy are the only two forms of the spirit which are really concrete, and in the end he came to see that these two concretenesses could not but coincide. Originally he had brought history under the general heading of art, distinguishing it as dealing with reality and not with mere imagination; this, he says, was because he was sure that history was too concrete to be absorbed in natural science, that art was a serious thing, and not an amusement, and that there was no third theoretical form of spirit besides art and philosophy. When, then, he became further convinced that philosophy excludes abstractness (by the exclusion, as we have seen, of classificatory and abstract science from the purview of Logic), the conclusion stated above became necessary for him. Philosophy is the complete establishment and interpretation of individual fact as given in the perceptive, including the historical judgment, the only fundamental and original knowledge of reality.[2] And what is true in natural science, or rather, in nature, belongs to this; for it is false that nature has no history.

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[1] Language of course, for Croce, covers all forms and media of expression.

[2] *Cf.* Gilbert Murray, *Literature of Ancient Greece*, 122: "The search for knowledge in the widest sense, which the Ionian called *ἱστορίη*, and the Athenian, apparently, *φιλοσοφία*. We are apt to apply to the sixth century the terminology of the fourth, and to distinguish philosophy from history. But when Solon the philosopher went over much ground in search of knowledge (*φιλοσοφέων*), he was doing exactly the same thing

Thus there is no philosophy of history nor of nature, and no history of philosophy. The former would be interpretations on the top of interpretations; for true history is already the full interpretation of historical and natural fact. And the latter would mean new and superfluous facts on the top of the facts; for in knowing history we already know the history of philosophy, which is within it.

There is indeed a judgment of definition, *e.g.* "Virtue is the habit of moral actions," which might seem to be an alternative rendering of the concept. But it is not a true judgment; it has no real subject and predicate, no distinction of presentation and concept; and further, when fully replaced in its context, it becomes identical with the individual judgment.

The individual judgment is always existential. It is essentially a presentation determined by a concept, and so categorical. Existence, Croce says, is a predicate (173); but what he means is better stated in the phrase (177) "the subject is determined as existence, and for this very reason determined in a particular way," and *vice versa*. In short, the conceptual predicate is attached to the object of perception and thereby qualifies reality. About the qualification of the real by the imaginary he seems to me less sure in touch, and is, I think, inclined to say that the latter exists only as something *de facto* imagined, which hardly meets the point (169). It may, however, represent an existing *desire*. This is a suggestion full of interest to-day in connexion with Freudian ideas.

This account of the individual judgment as categorical seems very valuable, and is, as Croce notes (561), distinctively modern. What startles me is that his logic, so far as I can see, contains practically nothing else.

(iii.) The syllogism, for example, is very cursorily treated, once (122) as the thinking of the concept in its distinctions, and consequently as an act not differing in kind from concept and judgment, and presupposing both *ad infinitum;* and again (140), in a page and a half, where the structure of the figures is briefly mentioned, but described as resting on a distinction of subject and predicate, employed in a purely verbal and empirical manner. This treat-

as the historians Herodotus and Hecatoeus." So too Wallace, *Hegel's Philosophy of Mind*, xlvii. : "The theme of the Unity of History . . . is the theme of Hegelian philosophy". As I have referred to a historical point in Croce's favour, it may be only just to mention one that perhaps tells otherwise. Though he would not have his priority of art to philosophy construed as temporal, yet I am convinced by the reference to Vico (pp. 428 and 568) that Croce's theory is affected by the idea that poetry was the primitive utterance of mankind. An echo of this idea in Symonds' Renaissance is criticised by Professor Burnet (*Early Greek Philosophy*, p. 195) with reference to Greek Philosophy; and I think it fails to recognise the profound practicality of primitive mind, and the antiquity of inscriptions stating pure fact.

ment illustrates Croce's acute insight, which at the same time, I venture to think, owing to his rigid isolation of principles and impatience of detail, betrays him into onesidedness. Certainly it is important to realise the unity of the whole syllogism as a single notion or judgment; that it *is* just thinking out a concept under its distinctions, and that it is not a combination of three separate acts. This insight ranks highest in the theory, and it is a great thing to have it recognised. Still, even taking in the statement in another place, of the inter-connexion of universal particular and singular, we are not satisfied that logic has nothing more to tell us of the syllogism. We should like to know what it means to use a major premiss, and whether the consideration of the figures brings out any difference of principle in this respect. We should like to know whether the development of a single subject into its implications, which the syllogism shows us in one form, could not be more completely grasped in its concreteness if recognised in many other forms. We doubt whether we have quite got a logic before us, when we have really not a word on the theory of inference. What, for instance, is demonstration? Croce makes merry (51) at the expense of those who expect, in the phrase of Thrasymachus,[1] to have the argument inserted in their souls by main force. But all this ingenious acuteness assumes an air of evasion. Fewer pages would have sufficed to say an intelligent word on the difference, for example, between demonstration and subsumption. In this connexion, and also elsewhere in the volume, we find disparaging references to symbolic logic in its older and newer developments. I am hardly the person to whom its students would wish to entrust their defence; but I am bound to say this much, that regarded as the general science of implications it merits a philosophical consideration which the author declines to bestow upon it. In the treatment of it and of mathematics he seems to me simply to reproduce Hegel's position. But granting, what I fully recognise, the instructiveness of that position, would not Hegel, if he were here to-day, have had something new to say about, for instance, the recent mathematical theory of the infinite? It is hard on lovers of Hegel to see the fine old paragraphs simply reproduced (417, 592 note) as if they had in them no capacity of fresh application or development.

(iv.) A few more examples out of many may be given to illustrate the cavalier treatment of topics in the discussion of which essential logical problems ought to have presented themselves. The law of Identity and Contradiction is (p. 100, *cf.* p. 337) briefly mentioned and well interpreted, but is not expounded in its inherent connexion with the Law of the Uniformity of Nature, which latter is separated from Logic, and relegated to the region of the empirical concept, with the irrelevant verbal quip that reality is not uniform (338). The Law of Excluded Middle and the doctrine of the opposition of judgments are passed over in silence; and to this omission I attribute some uncertainty in handling the problem of opposites and of negation, to which I shall recur. The doctrine of predicables, involving classification and definition by genus and species, is dismissed as a matter of caprice upon caprice (89) referring to empirical concepts, whereas true classification is only to be found in the re-entrant curve of the categories. Yet the distinction of property and accident raises the whole question of the contingent and the necessary, which stands broadly in the way of Croce's doctrine respecting history, philosophy, and reality. The 'inverse ratio' of extension to intension is mentioned in passing (84) as a self-evident consequence of the relation of the moments of the notion, apparently without an inkling of the profound implications of that problem for the theory of the concrete universal.

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[1] My expression.

Part I. of the volume, I should explain, exhibits the logical doctrine proper, that is, the theory of the pure concept and the individual judgment. Part II. develops the thesis, stated in Part I., of the identity of history and philosophy, and that of the extrusion of natural science and mathematics from the province of philosophical knowledge. Part III. deals with the theory of error, chiefly as embodied in a certain cycle of philosophical confusions, alleged and estimated from the standpoint of Croce's system ; and Part IV. is a historical retrospect of certain logical topics, and concludes with an important statement of the features on which Croce's Logic rests its claim to originality.

In all this the theses of Part I. are extended and expanded, but except in the treatment of error its logical content is not augmented.

I have noted the audacious paradox—the identity of history and philosophy—which forms, one may say, the content of this logical treatise; and also the restricted reference to those problems which constitute the substance of Logic as commonly understood. Does the explanation of these two characteristics rest, as we might expect, upon an underlying connexion between them? It seems clear that when you have set up one form of judgment as the central phenomenon you have excluded a great part of logical experience. This brings me to my second question :—

II. Why is there no more than this in Croce's Logic?

(i.) I believe that the answer is in principle pretty clear. It depends, I think, on a fundamental aspect of Croce's doctrine to which I have already referred. For him there is no general philosophy ; and, accordingly, there is no total reality, including within it, as degrees approaching a unitary whole or perfect experience, the distinctions of the pure concept, beauty, truth, and the rest. He calls these indeed degrees of reality, but they are not degrees of approximation to the nature of any whole within which they fall. They do not take rank in virtue of a more or less of any common character. This striking feature of Croce's thought, which explains among other things his rejection of religion as a special recognition and experience, is rooted in a view to which he devotes a chapter in Part I., but which he has expounded fully in his study of Hegel's philosophy.[1]

He points out that pairs of "opposite concepts," as he calls them—the term "opposite," I hold, has meaning only as applied to judgments—such as being and not-being, beauty and ugliness, truth and falsehood, have not, within each pair, the same relation which "distinct concepts," such as beauty, truth, and goodness, have to one another. The observation is plainly true and important, especially in the appreciation of Hegel's dialectic. The "opposites" are, I should say, unreconciled differences of the same subject. The "distincts" are reconciled by their assigned places in the systematic whole. The point is noted, in effect, by Hegel himself, and, of course, by students of his method.[2] The result, however, which Croce draws from it, is that whereas the dialectic movement, the mainspring of which is a contradiction in reality as determined by certain predicates, applies to the "opposites," each of which implies and ultimately overcomes its negation ; yet it does not apply in the same way to the "distincts" (which Dr. Mackenzie has recently called the counterparts). Truth, for example, is not, like ugliness, the negative opposite of beauty, nor goodness, like falsehood, that of truth. And there springs from this again the all-important conclusion that in each of the "distincts"—the great linked aspects of the unique "pure concept"—there is no factor of defect such as in the pairs of opposites pushes on the one to realise its unity with and absorption of the other, as that beauty, for instance, is defective and a contradictory determination of reality, which has not overcome and assimilated ugliness. It is for this reason that for him there is in Logic no general criterion drawn from the nature of the whole reality, such as to make demands on the phases and stages of thought, criticising them as carrying contradiction within them in different degrees, and assigning them their rank according to their capacity and coherence as vehicles of truth. The linked unity of the concept—the notion—is taken as perfect in all its manifestations, and none of them has a defect such as to drive the mind forward to another as nearer the whole.[3] *A fortiori*, no dialectic progress can apply to the pseudo-concepts, the notions of natural science and mathematics (p. 101), which are regarded as purely arbitrary and practical in their motive and method of formation.

(ii.) This being so, Croce's attitude to the individual judgment is wholly devoid of criticism. It was well done, and, as he says, in the spirit of modern Logic (p. 561), to identify it with the categorical judgment in contrast to any mere connexion of words or combination of class-concepts. But the modern attitude to it has also another side, which may be expressed by saying that every judgment, categorical in the sense of the individual judgment of narrative or perception, is necessarily false. There can hardly, it would be urged, be more bare and unreasoned conjunctions than those embodied in such individual judgments ; there can hardly be concepts more abstract than the subjects of historical judgments isolated out of the vast concreteness and complication of historical reality. "Cæsar and Napoleon," he says (p. 203), "are as necessary as quality and becoming." Yes, if you give each of them his adequate context, explaining the necessary connexion. But what a context, and what a connexion ! On page 67, where "the individual" is spoken of as "the situation of the universal spirit at a determinate instant" and is contrasted with the empirical concept of a Socrates, say, as we figure him to ourselves in common knowledge, the truth of the matter seems splendidly expressed. But I cannot reconcile this passage with the rest of the doctrine of individual judgment. Work out the latter, I should urge, in the light of page 67, and the individual judgment, as an adequate vehicle of reality is exploded and abolished.

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[1] *Saggio sullo Hegel*, 1913.

[2] See *e.g.* Mackenzie, *Elements of Constructive Philosophy*, p. 174.

[3] P. 103, *cf. Saggio sullo Hegel*, p. 65, where the absence of defect such as to set up contradiction within each distinct phase of the concept, *e.g.* within the experience of beauty, is explicitly and vigorously maintained

The truth of the natural sciences is rightly ranked as less than ultimate, and as in a sense subservient to practice ; but its aspect of necessity and relevance—the commensurateness of S with P—cannot be put out of court when we are applying to thought the general criterion of comprehensiveness and coherence.

It is by neglecting considerations like these and extruding from Logic all application of the general criterion of system that the science has been eviscerated of its normal content, and that a single class of judgments, significant but by no means ultimate, has been taken as coextensive with philosophy.

We see the result plainly in the special pleading which becomes necessary to account for the advance of the mind from one category to another. There is nothing, we saw it urged, defective or unsatisfactory in the lower category itself (p. 103, *cf. Saggio sullo Hegel*, 65) ; there is indeed no lower and no higher. The contradiction which causes the transition is a purely psychological contradiction, a fatigue, as it were, in the experiencing mind.

Hence there is no necessary error in the lower grades of truth, and as insufficient determination is thus not recognised as the principal factor in the adoption of false alternatives some positive vice is needed to account for it. Croce states so forcibly the true principle that every negation must have a positive ground, as to obscure the truth that after all its positive content must meet in the same world with the positive with which it clashes, or the two could not so clash and exclude one another. Such over-statement is his habit, I would almost say, his philosophy.

Thus, for him, you have in negation or in error a practical act, of no theoretical value, say, a lazy thoughtless utterance intended to gain the assent of fools. But when this is branded as false, what is added to it is the desire or command that a genuine serious thought should take its place. Thus the lower truth is taken out of the world of truth and falsehood and no longer judged by its criterion, and so ceases to be, in itself, error. There is no error without intent to deceive (pp. 97, 395). Thus to point out the onesidedness of any experience, such as beauty or religion, can be regarded by him as treating it *qua* a lower form of truth and therefore *qua* a mere theoretical error, and as he believes that there is no such aspect of lower forms of truth, he infers, in the case of beauty, that there is no error or defect; in the case of religion, that there is no such experience, but in its place a mere perverse advocacy of an indolent philosophy, being positively in its ground or existence "an arbitrary attempt against truth, due to habit, feelings, and individual passions" (446); and that therefore in reality there is no such thing as religion.

No doubt Croce has done well to rule out of Logic many classifications and antitheses which are in truth, as he calls them, purely verbal. But, as it seems to me, the only way of becoming aware what is purely verbal and what is not, the only way of not falling a victim to the forms of expression, is not to try and reject all reference to them, but to survey and criticise the whole of them, assigning them their values by the result of the survey. When you have a mass of data, none of which are *prima facie* decisive, but which as a whole are the only evidence you possess—and this is the relation of expressive form to logical thought—the only possible course is the one I have indicated. It is the course which we inevitably follow in all rational treatment of experience. The decision as to what is trivial and may be rejected must come after the survey and criticism, and not before. Granted that language is not purely logical, and that its distinctions cannot be read off as they stand into logical features, yet the critical interpretation of language through the wide comparison of its uses remains the only key to thought. How else are we to enter into each other's minds or our own? For every form and problem which you omit to scrutinise, the universal of logical thought forfeits some nuance of concreteness and significance. And when we note the omission from the real world of such an experience as religion, simply because our logic has excluded the criterion which points to an inclusive reality, and if there is no inclusive reality there can be no attitude of our being towards such a reality, we see how the narrowing of Logic has impoverished the universal of life.

The fundamental novelties which Croce claims for his treatise in his concluding remarks, centre in the exclusion from Logic of the natural and mathematical sciences as atheoretical and practical, the denial of the applicability of the character of "opposites" to the "distinct concepts" or categories, the complete substitution of history for the sciences as furnishing the wealth and content of philosophy; and finally, the total rejection of formalist logic, that is, apparently, of every attempt to gather the nature of logical thought from its expression in language.

The whole system of the philosophy, with the Logic as implying it and implied in it, is a construction of wonderful ingenuity and much insight. The Logic seems to me beyond criticism in so far as it stands on the unity of reality and the existential character of the judgment. Only, although philosophy is indeed no more than the full interpretation of facts, yet this has many grades and aspects, and the fact given to perception is itself a very different thing from the underlying subject in which a complex of data is unified for inference, or the ultimate subject, for example, of a categorical judgment which does not deal with events. And so my final feeling is that Croce has achieved a successful and instructive adventure in welding together the extreme poles of the logical world, but that he has dropped out the systematic structure of the whole which lies between them, and consequently has left them, though attached to the same axis, yet irreducibly unreconciled with one another.

BERNARD BOSANQUET.

Mysticism and Logic, and Other Essays. By BERTRAND RUSSELL, M.A., F.R.S. Longmans, Green & Co. Pp. viii, 234.

THE essays in this collection have all appeared before either in journals or in published books, and several of them have been already reviewed in MIND on their original appearance. But some of them were difficult to procure; and Mr. Russell's *Philosophical Essays*, which contained several, is now out of print, and by some mistake, I believe, was never noticed in MIND. No excuse therefore is needed by Mr. Russell for republication, or by us for reviewing.

The book consists of ten essays of which the first five (*Mysticism and Logic, The Place of Science in a Liberal Education, A Free Man's Worship, The Study of Mathematics*, and *Mathematics and the Metaphysicians*) are comparatively popular, whilst the remainder (*Scientific Method in Philosophy, The Ultimate Constituents of Matter, The Relation of Sense-data to Physics, The Notion of Cause*, and *Knowledge by Acquaintance and Knowledge by Description*) are more technical. The essays on mathematical subjects have been brought up to date by additional notes; but Mr. Russell remarks in the preface that he is now less convinced than formerly of the objectivity of good and evil, and it is uncertain how far this change of view should modify the essays which deal with ethical questions.

I think it is fair to say that the keynote of the earlier papers is the demand for 'ethical neutrality' in philosophy. This is the pursuit of our investigations without reference to hopes and fears as to the destiny of ourselves or of our race. Ethical neutrality has been obtained in most branches of science (though I think we must except some physiological and biological speculations), but it has hardly been reached by philosophers. I agree entirely with Mr. Russell about the importance and the rareness of ethical neutrality in philosophy. Our hopes, fears, and judgments of value (even supposing the latter to deal with a characteristic of things as objective as redness or squareness) seem to me to be only relevant in philosophy in one rather roundabout way. The way is this. Among the facts that the ethically neutral philosopher has to recognise is the somewhat strange one that the process of evolution has produced people with hopes and fears, and with the power of ignoring them and acting and speculating disinterestedly. Now this fact *may* be perfectly compatible with such a view of the universe as is held to be almost certainly true in the *Free Man's Worship*. On the other hand, it is by no means obvious to me that it is compatible with such a view. The philosopher who lacks ethical neutrality immediately jumps at this difficulty and fills in the gap in his knowledge with a more comfortable hypothesis than the mechanical theory. But an ethically neutral thinker, recognising that there is not the slightest necessity for causes to resemble their effects, will, I think, refuse to do this. The effect on him of considering those facts which Mr. Russell somewhat ignores in the *Free Man's Worship* will simply be to reduce his confidence in the adequacy of the mechanical theory; he will, however, frankly admit his ignorance at present as to how it ought to be modified or supplemented, and will not assume that the modification must be in accordance with our hopes or our judgments of what is good. As against every form, from the crudest to the subtlest, of what is called Ethical Idealism, I believe Mr. Russell to be absolutely right. Every such system involves at some point the logical fallacy of passing from what ought to be to what is; and the state of mind which makes a man slur over this fallacy seems to me a detestable intellectual vice whose effects will not be confined to his philosophy.

I must add, however, that, so far as I can see, it is not a breach of ethical neutrality for a philosopher or physiologist to introduce at some point the hypothesis that certain processes in nature are more akin to mind than a mere study of chemistry and physics would suggest. Mr. Russell seems to hold that the motive of such a thinker is always to make the universe more 'homely'. But mind, on the face of it, is a *vera causa* among others; and some processes in the evolution of species and even in the growth and adaptation of living bodies have a very strong appearance of something like human design. To take, purely as an hypothesis, the view that they really are due to something like mind is as scientific as to suppose that light is due to something like waves in the sea. The main objection to the hypothesis is not that it is assumed to flatter our hopes, but that it is so difficult to state it clearly and work out its consequences in detail that it can hardly be verified, refuted, or modified by experience.

Mr. Russell evidently sets great store by the essay on *A Free*

Man's Worship. I think we must admit that, even though the mechanical theory, which it assumes, needs modification, no modification will make the world a decent place unless it allows that some people at any rate survive the death of their bodies. Unless this be so all values produced on earth are destined to extinction sooner or later. Now I am quite sure that philosophy has nothing whatever to tell us about survival except by the illegitimate process of postulating that what would be very bad cannot be true. So, in the main, I am inclined to think that Mr. Russell's pessimism remains the most probable view, though I am slightly less certain than he for two reasons: (*a*) that I think it highly probable that the mechanical theory is not the whole truth, and do not know how much modification it may need; and (*b*) that, whilst fully recognising the almost insuperable difficulties, I think it possible that the progress of Psychical Research (which appears to me to be the only way of dealing scientifically with the question of survival) may necessitate a modification of that view about human destiny which is almost forced on us by most of the other sciences when taken by themselves. (I must add that with survival the world might be worse than without it, a fact which enthusiastic believers in immortality sometimes forget. On the mechanical theory we know the worst and can avoid it by suicide. But if we survive bodily death we may be doomed to become continually more wicked, stupid, and wretched, and yet be indestructible. Survival in fact is a *necessary*, but not a *sufficient* condition of decency in the universe. The alleged communications of the departed certainly do not suggest on the whole that they have improved in intellect or virtue. Hence things may be even worse than Russell suggests.)

So much then for the facts which the Free Man has to recognise; what of the attitude which Mr. Russell advises him to take up? Negatively, he is not to think that external nature or human institutions are better than they appear because they are stronger than he and can hurt his body. This is excellent advice against the cosmic snobbery of the nature-worshipper, and the political snobbery of the worshippers of our 'new idol' as Nietzsche termed the state. Again, Mr. Russell strongly insists, the Free Man will not spend his time shaking his fist at the universe, for this attitude of indignation is itself a kind of slavery. (We might add that to feel moral indignation at the inanimate world is ridiculous, since it is not susceptible of moral predicates, whilst to shake one's fist at God is a consolation which Mr. Russell's Free Man—in spite of the drama with which the essay begins—could not consistently enjoy.) When we come, however, to Mr. Russell's positive directions to the Free Man, I fail to see how they are connected with each other, or with the Free Man's view of the nature of reality. He is advised to moderate his desires for particular objects, to accept the indifference of nature to his ideals and 'turn his necessity to glorious gain' by viewing the life of man as a sublime and beautiful tragedy, and to be uniformly kind to others and not to judge them harshly.

The first and last of these maxims seem to me obviously sound, but to have very little connexion with the Free Man's views on human origin and destiny. No special view of the universe is needed to enable us to see that most things which most men and nations struggle to get are not worth crossing the road for. We have merely to observe that the people who do get them are not satisfied, and in general we could easily foresee that they would not be satisfied. Again, it is clearly my duty to be kind and helpful and not to judge harshly; but why is it *specially* my duty to be kind and tolerant to people when I know that they and I are the temporary results of a clash of atoms? You might perhaps say that a man will naturally be less inclined to judge his fellows harshly on this view because it is hardly reasonable to expect much of beings with such an origin and destiny as theirs. But this, I think, is a fallacy. What may reasonably be expected of people can only be determined from an empirical investigation of how people on the average act. If a clash of atoms can produce consciousness and moral action at all our utter ignorance of the details of the process precludes us from arguing deductively to a low rather than a high average of moral achievement. Hence the knowledge that Smith is the transitory result of a fortuitous concourse of atoms provides no special reason for excusing him if his actions fall below the average level attained by the consequents of other such concourses. The Free Man will of course be unwise to lose his temper with Smith, for this is slavery; but it would equally be slavery if Smith were an immortal spirit.

If nature be indifferent to our ideals we shall of course do well to accept the fact and make the best of it. But I fail to see how the long and foredoomed struggle of the human race against cold and the exhaustion of raw materials can give æsthetic satisfaction as a tragedy even to the most impartial spectator; at any rate I should think that the last few million acts will be merely dull and depressing. I doubt if a good tragedy could be made out of the struggles of starving sailors on a derelict ship. In fact a process may be painful and humanly disastrous without being in the artistic sense a tragedy, as when a workman falls into a vat of boiling nitric acid. It seems to me that to make a genuine tragedy we need a selection of incidents between man and man, not the whole course of man's struggle with nature. Is the Free Man allowed to select, or is he to contemplate so far as possible the whole process? Again is he supposed to remember in general his view of man and nature as a whole or only its pessimistic consequences? If the former, there will surely be no question of tragedy but only of the interplay of atoms according to natural laws. If the latter why stop at this amount of inconsistency, when it would be more cheerful to do as most scientists do, and forget both the theory and the consequences?

The essay which gives its title to the book is an attempt to estimate the functions of mystical insight and of detailed scientific investigation in the establishment of philosophical systems. Mr.

Russell thinks that both are necessary. According to him the main characteristics of mysticism are: (1) a belief in direct insight as against detailed analysis; (2) a denial of plurality; (3) a denial of the reality of time; (4) the belief that evil is in some sense an illusion. Mr. Russell holds that most probably mystical doctrines are invented afterwards to explain the feeling peculiar to the mystical experience. As doctrines he is inclined to think that they are mainly false, but that all contain a germ of truth which it is most important not to neglect. The first is right in so far as the function of reason is merely to mediate between intuitions. It is wrong when some special kind of intuition is held to give a revelation which is to be trusted apart from all criticism and comparison with other intuitions. There is here some excellent criticism of Bergson which appears in the *Lowell Lectures.* The denial of plurality, Mr. Russell regards as responsible for the logic of absolute idealism, and he holds that its origin in mysticism explains its total inability to deal with any of the other facts of life and science.

The denial of the reality of time is false as applied to the relation of before and after, but it is valuable as a criticism of the purely human insistence on the distinction between past, present, and future, a distinction which is of no importance to the universe at large, but depends on the fact that our desires work forwards (and, I would add, that our memories work backwards). As regards the fourth point, mysticism generally uses good in two senses; there is a purely human sense in which it has an opposite, but both predicates are within the realm of appearance, and there is another sense in which it has no opposite. In this sense it applies to reality alone, and to it as a whole. Mr. Russell seems in the main to accept this view, and to regard it as a valuable protest against using ethical arguments on philosophical questions. Running through these essays there seem to me to be three questions about good and evil which are not very clearly distinguished: (1) Are good and evil merely subjective? (The preface suggests that this is so.) (2) Is anyone sufficiently free from bias to be a fair judge of better and worse? (The story of the pigs and the Grand Augur in Essay VI., and the doubt as to whether amœbæ would consider that the course of evolution had been upward or downward are here in point.) (3) Are good and evil sufficiently fundamental categories to be dealt with by philosophy? (The argument that love and hatred are very similar types of complex from the philosophical point of view in spite of their entirely opposite ethical character seems to be concerned with this question.) It is clear that (2) and (3) might be answered negatively without necessitating an affirmative answer to (1), whilst the affirmation of (1) involves the denial of (3) and the irrelevance of (2). As regards (3) I seem to detect yet another possible confusion. We must distinguish between the properties of good as an abstract characteristic and the properties (if any) other than goodness which are common and peculiar to good things. The argument about love and hate only proves that a good thing and a bad thing may be very similar in their other properties. It does not have any tendency to show that there might not be a science of pure ethics dealing simply with goodness in the abstract. At present such a science seems likely to be 'short and dry' as Kant said of formal logic; but we may be as mistaken here as Kant has proved to be there.

The rest of the 'popular' essays call for no special comment, and I pass to the more technical ones. The Herbert Spencer Lecture on *Scientific Method in Philosophy* has already been reviewed in MIND by Dr. Schiller. With its plea for ethical neutrality, patient analysis, and logical construction as the only hopeful method in philosophy I entirely agree, and the examples about space and the reality of the external world are completely opposite to Mr. Russell's thesis. The essay on the *Notion of Cause* was reviewed in this journal by me when it appeared in the Aristotelian Society's *Proceedings* for 1912-13. Essay VII. on the *Ultimate Constituents of Matter* is a very important one in connexion with Russell's views about physical objects which will be familiar to most readers of MIND from the *Lowell Lectures.*

In Russell's view the chief difficulties of realism in regard to the external world spring from three sources: (*a*) the belief that physical objects must be persistent; (*b*) the belief that space has only three dimensions; (*c*) the belief that an event can only have one cause. These beliefs create difficulties even after the more obvious confusions such as that between sense-data and sensations have been removed. For Russell the world consists of (i) minds; (ii) a six-dimensional manifold of sensibilia, each of which has probably only a very short duration. Most of these sensibilia have no direct spatial or temporal relations (such as exist between the sense-data cognised by a single mind) to each other. But most of them can be classified consistently according to two different schemes. (i) We can classify them into groups such that the members of any given group have direct temporal relations to each other, though members of the different groups have no direct temporal relations. Such groups are called 'biographies'. All the sense-data cognised by a single mind form a biography, but there are doubtless similar groups of sensibilia cognised by no one. The latter, Russell, with some humour, terms 'official biographies'. (ii) The other method is to classify together all sensibilia which are related by certain relations of similarity and continuity. These groups are what are meant by 'things,' their members are the 'states of things'. Sensibilia do not depend for their existence or nature on minds, but the members of one group may vary with those of another and particularly with those of the group which constitutes a human body. It is possible that some sensibilia (*e.g.*, dreams, etc.) are 'wild', *i.e.*, are members of a biography but are not members of a thing. By a logical construction we can regard groups of the second kind as being in a single three dimensional space with constructed spatial relations. This seems to me to be about the most hopeful theory that I have yet seen about the physical world. No doubt it bristles with difficulties of detail, but I do not see why they should be insuperable. *E.g.*, I suppose the distinction between what would ordinarily be called an objective change—as where a thing breaks in two—and a subjective one—as where we push our eye aside and double our sense-data would be explained somewhat as follows. In an objective change there is a change in practically all the members of the thing, and therefore in practically all the biographies which contain members of the thing. In a subjective change only that member of the thing which is in a single biography changes. I do not see clearly at present how the theory is going to deal with mental images. These do not seem to be ordinary 'wild' sensibilia, for there seems to be a clear difference open to inspection between images and sense-data. I am indeed strongly inclined to think that my visual images are not in the same private space as my visual sense-data, and that even the colours and loudnesses of my images are not directly comparable with those of my sense-data. *E.g.*, I can hear a whistle and have an image of the sound, but it does not seem to me that the image and the sense-datum are at the same point in a single scale of loudness, but rather that they occupy correlated positions in two entirely separate scales. There is again the fact to be noted that I cannot have an image of a colour unless I have previously sensed either the same (or, on my view, the correlated) colour. This seems curious if images be not in some way mind-dependent, though of course it might be put in a form which only makes the image dependent on my body and my past sense-data.

The next essay on the *Relation of Sense-Data to Physics* is earlier in publication than the one just discussed, and we need not consider it in detail. I will therefore conclude with a few remarks on *Knowledge by Acquaintance and Knowledge by Description.* Mr. Russell says that he recognises, owing to Mr. Wittgenstein's criticism, that his theory of judgment needs some modification, but that the changes needed are not serious. I have not, unfortunately, had an opportunity of talking to Mr. Russell for the last three years or so, and therefore I do not know precisely what Wittgenstein's criticisms and the consequent modifications may be. But I will risk the following criticisms even though they prove to be quite out of date. It seems to me that Russell's theory of judgment, as offered, will only apply to judgments where we are acquainted with all the terms which the judgment verbally professes to be about. In my judgment that $3 > 2$ it is plausible to hold that what exists is a complex which I will write $J(M, 3, >, 2)$. Here M stands for my mind and J for the relation of judging. But now take my judgment that Julius Cæsar was assassinated, and suppose that I only knew Julius Cæsar by the description 'the man who was called *Julius Cæsar*'. The proposition that I judge, on Russell's analysis, becomes:—

$$(\exists b) : x \text{ is called } \textit{Julius Cæsar} \,.\equiv_x.\, x = b : b \text{ was assassinated.}$$

Now on Russell's theory I must be acquainted with every term in my judgment. What then are the terms in my judgment when I judge that Cæsar was assassinated? The only ones that I can see are *Julius Cæsar*, calling, formal equivalence, identity, and assassination. It can hardly be said that x and b are terms with which I am acquainted, since they are variables and apparent ones at that. Again the terms which the relation of formal equivalence relates are none of the terms which I have mentioned, but are propositional functions taken as wholes and having these terms as constituents. It would seem then that propositional functions must be able to enter as wholes into the judgment complex, and that they cannot enter as separate terms and a non-relating relation as 3, $>$, and 2 enter into $J(M, 3, >, 2)$ on Russell's view. We must then, I should suppose, be capable of being acquainted with propositional functions as well as with terms of the more ordinary kind. Further, for any complete theory of judgments ostensibly about objects known only by description we must know how the incomplete symbol $(\exists b)$ . . . is going to figure in the judgment complex. If Russell's theory of descriptions is to answer its purpose we must be able to know that $(\exists b) . \phi b$ without having to be acquainted with anything that actually does satisfy ϕb. Until these points are settled in detail it can hardly be said that the theory of judgment throws any light on judgments ostensibly about objects known only by description. And these are of course the commonest and most interesting kind of judgment.

There is just one other remark that I wish to make about descriptions. All descriptive propositions involve a formal equivalence of the kind $\phi x \equiv_x . x = b$. This equivalence is never or hardly ever guaranteed by logic. Logic will not assure us that x is called *Julius Cæsar* $. \equiv_x . x = b$, as it will assure us, *e.g.*, that

$$\alpha(\beta . x \epsilon \alpha .)_{x, \alpha, \beta} . x \epsilon \beta .$$

Now it seems to me very unfortunate that the same name—formal implications or equivalence—should be used to cover what are surely quite different relations. Nor is this difference merely a psychological or epistemological difference in the way in which we get to know the same kind of logical fact. For the one kind of implication depends on the logical structure of the related terms, whilst the other does not. This is no objection to the theory of descriptions, but that theory does seem to me to force the distinction, which of course occurs in numberless other places, specially on our notice.

I have harped in this review mainly on points of disagreement. This should not hide the fact that I am wholly in agreement with Mr. Russell's general attitude towards life and philosophy, and with his philosophical method. I only refrain from praise because praise from me to him would be impertinent. Those who agree with me in thinking that the Free Man can extract from the evils of human life a subtle comedy as well as a sublime tragedy will derive exquisite entertainment from reading this book and noting its spirit, and then reflecting that the author was recently lectured publicly on elementary morality by a complacent spiritual descendant of the late Mr. Nupkins.

C. D. Broad.

Perception, Physics, and Reality; an Enquiry into the Information that Physical Science can Supply about the Real. By C. D. Broad, M.A., Fellow of Trinity College, Cambridge. Cambridge, University Press, 1914. Pp. xii, 388.

This book has a peculiar and unusual quality, in virtue of which it serves a purpose analogous to that which examiners are supposed to serve in education. It does not advance any fundamental novelties of its own, but it appraises, with extraordinary justice and impartiality and discrimination, the arguments that have been advanced by others on the topics with which it deals. Mr. G. E. Moore's *Refutation of Idealism* is awarded an Alpha-minus (*cf.* p. 177 *n.*); the rest of us receive such betas and gammas as we deserve, except Locke, who I think may be said to be ploughed.

Locke is the chief victim in the first chapter, "on the arguments against naïf realism independent of the causal theory of perception". There is a long discussion of Locke's two hands in lukewarm water, ending, apparently, with the conclusion that whatever *prima facie* case this experiment may seem to establish against realism can be avoided through the assumption that hands are warmed by being put in cold water and cooled by being put in hot water, or through various other less plausible assumptions.

Mr. Broad's general attitude is that of one who wishes to defend realism, but finds the task difficult. As he proceeds, the arguments against realism grow more and more formidable. At the end, he is left with only a certain degree of probability in favour of a view which is only a pale shadow of the robust realism of common sense. Accepting from Mr. Moore the importance of distinguishing between a perception and its immediate object, the problem for Mr. Broad is as to the relation of this immediate object to the 'real' in the physical world. His definition of 'real' is to be gathered from the following passage: "Whatever else may or may not exist, it is quite certain that what we perceive exists and has the qualities that it is perceived to have. The worst that can be said of it is that it is not also *real*, *i.e.* that it does not exist when it is not the object of someone's perception" (p. 3). That is to say, the 'real' is what does not exist only when it is perceived. Much might be said in criticism of this definition, but it is at any rate clear and definite. He formulates two questions immediately after giving this definition, namely (*a*) do objects of perception themselves continue to exist at times when they are not perceived? and (*b*) do things exist which are not perceived but are inferrible from perceived objects and have some relation to these objects such as could be called 'correspondence' with them? In the main, the first chapter rejects (rightly as I think) such arguments against realism as are familiar from Locke and Berkeley. But the different visual appearances of a given thing from different places lead to the conclusion that touch is a sounder source of knowledge as to shape than sight. This conclusion is adhered to throughout the rest of the book. The ellipses of various eccentricities which are seen from various places in looking at a circle cannot, Mr. Broad thinks, be *all* real, not because such a view would be logically impossible, but because it would be so terribly complicated (p. 41).

I think that we have here the first effect of an undiscussed dogma which is embedded in Mr. Broad's conception of 'reality'. What makes Mr. Broad call unperceived objects 'real' is not the mere fact of their being unperceived, but the supposed fact that they persist. He seems, in fact, to work with the notion of substance,[1] with the belief that the physical world must consist of permanent entities with changing relations. I think the contrary view, that permanence is constructed, and is that of a temporal series of successive existents, makes the relation of the object of perception to physical reality much simpler. We can then hold that, although we do not perceive everything, all that we do perceive is 'real' in the only sense in which anything is 'real'. All the visual ellipses 'corresponding' to the one tactual circle are 'real' while we see them, and nothing that exists (so far as our evidence goes) persists for very long. This view is not more complicated than the view that denies 'reality' to the visual ellipses. For on Mr. Broad's view they exist, and must have their place in an inventory of the world; but on his view there is something else of a different kind, more 'real' than they are, whereas on the view that I should advocate there is nothing more 'real,' though there may be many things which we do not perceive.

There is a very good discussion (p. 45 ff.) of the reasons which make it impossible to know that such words as 'red' and 'green' have the same meaning to two different people, but possible to know that such words as 'agreement' and 'difference' have the same meaning. The point is very important, and I do not know of any author who has made it so well.

The second chapter is "On Causation; and on the arguments that have been used against causal laws". It begins by stating that it will assume the validity of arguments from probability, and of induction as a means of establishing probability. There is in the early part of the chapter a certain amount of discussion of somewhat familiar themes, such as whether a cause is a thing or an event, and whether a cause is to be interpreted in terms of activity or of regularity. Naturally the regularity view is adopted. Equally naturally, it is decided that transeunt causality is quite as possible as immanent causality (p. 105). The discussion on "causal laws and time" (p. 106 ff.) is to my mind unsatisfactory because it seems to assume the continuity (or at least the compactness) of change, not merely as applied to the world as a whole, but also as applied to small portions of the world. If, as I believe, whatever exists persists for a finite time (however small), the truth must be more like the modern physical theory of *quanta*. Continuity, like permanence and everything else that is mathematically convenient, will be a matter of logical construction. This, if it be the case, compels a somewhat new discussion of such questions as the temporal contiguity of cause and effect. Something like this view is discussed on page 114, but in connection with what I should regard as an unduly conventional theory of time and space.

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[1] This notion is rejected on page 103, and is certainly not *intended* to be assumed anywhere. But I think it is 'real,' *i.e.* exists when Mr. Broad does not perceive it.

It is often thought that, when an effect is complex, its cause must be equally complex. A sound, for example, has the characteristics of pitch, loudness, and quality. Must the cause of the sound which we hear have three corresponding characteristics? Mr. Broad shows that there is no ground for thinking so (p. 139). The point is important from its bearing on the possibility of mechanical explanation in general.

The conclusion of chapter ii. had better be given in Mr. Broad's own words as it would be difficult to state it either more briefly or more clearly:—

"That every event has a cause means on our theory that to every true proposition asserting the occurrence of an event at any given time there is a number of true propositions asserting the occurrence of other events at different (and perhaps, to be in accord with tradition, we should add earlier) times such that relative to this set the probability of the event's occurrence is 1. This proposition does not seem to me self-evident, nor do I know of any means of proving it. At the same time it obviously cannot be disproved and it is advantageous to assume it as a methodological postulate" (p. 161).

I can find no criticism to make of this statement, given the author's apology as regards probability (p. x.). I feel less convinced as regards what we are told (p. 114) is an *à priori* truth, namely, "the law that a system that has been quiescent for a finite time can only be set in motion by a causal process transeunt to itself"; but in view of the fact that no instance of a quiescent system is known, the question is perhaps not of great importance.

Chapter iii., "On phenomenalism," discusses the views of Mach, defended, not by Mach's arguments, but by those much better ones which Mr. Broad would advance if the views were his. Phenomenalism is defined as the theory which "holds, not merely that the objects of all our perceptions exist only when they are perceived, but also that there are no permanent real things with laws of their own that cause these perceptions and in some measure resemble their objects" (p. 164). It is pointed out

(p. 165) that this theory is incompatible with the causal theory of perception, according to which our sense-organs are part causes of our perceptions. For if phenomenalism is true we have no eye except when some one sees it, and therefore what we see when we are not under observation cannot be caused by the structure of the eye. This is a perfectly irrefutable argument. It does not provide any ground against phenomenalism, but if phenomenalism were otherwise acceptible it would afford a ground against the causal theory. It does not *prove* that it is impossible to deduce phenomenalism from the causal theory, since there is no fallacy in using a false premiss for the purpose of proving its own falsehood. The one thing it does prove is that phenomenalism and the causal theory cannot both be true ; and this is important, since those who believe either generally believe the other, and the two together (though both cannot be true) are far more plausible than either separately, though either separately may be true.

This chapter does not seem to me very satisfactory. "I think it is perfectly clear," says Mr. Broad, "that an absolutely pure phenomenalism that wishes to explain and anticipate our perceptions can be ruled out of court. We will suppose that it is allowed to assume present perceptions and those that it can remember. It is quite clear that with these alone there are no causal laws possible that will account for the perceptions we may expect to have anything like as well as the assumptions which science makes will do" (p. 168). This certainly *seems* true ; but is it ? I am troubled by an argument which needs to be tested by practice, but which meanwhile I will advance with due hesitation. My problem is : How can we ever obtain any evidence for a causal law except through perception ? And, that being so, must not the unperceived elements in such a law be definable as functions of the perceived elements ? And, in that case, do these functions serve any vital purpose except *as* functions of perceived elements, and is there any reason to suppose that they represent independent reals ? It seems to me that a world sparsely dotted with perceived elements can be "filled out" in the same kind of way in which a descriptive space is filled out until it becomes projective. The elements added will be functions of the elements given, just as are the "ideal" points, lines, and planes that are added to a descriptive space in constructing a projective space from it. The assumption that the ideal elements "exist" is, it seems to me, theoretically otiose, and merely convenient as affording resting-places for our feeble logical imagination. I grant at once that undiluted phenomenalism cannot yield as well-filled a science of physics as we are accustomed to, but I contend that what would have to be omitted represents mere prejudice or guess-work, for which there is no shred of empirical evidence. If all this is true, it does not, of course, prove that phenomenalism is true, but only that it cannot be shown to be untrue, and that it is the most economical of all the theories that may be true. The prudent philosopher, it seems to me, will no longer aim at finding one certainly true complete theory in any subject: he will be more likely to find that an infinite number of theories are compatible with all the data, and he will assert only the common part (if any) of all these theories. In the problem with which we are concerned at present, this common part, I suggest, is what is *positively* asserted by phenomenalism. I do not say this is certainly the case; I merely think it may be, and Mr. Broad has not shown that it is not.

Chapter iv., a very long chapter, is on "The causal theory of perception". This theory, to begin with, is described as "the view which is certainly held vaguely by educated common-sense that our perceptions have causes and that some relation is to be found between the nature of these causes and the reality of the objects perceived" (p. 187). He suggests (*ib.*) that this theory *may* be a will o' the wisp, but he certainly does not succeed in proving that it is. He distinguishes it from the "instrumental" theory, according to which our sense-organs under suitable circumstances are instruments for perceiving reality, while under other circumstances they lead us to illusion. This theory, after considerable argument, is criticised, mainly on the following ground:—

"Grant that there is illusion whether small or great and you must grant that the complex mechanism involved in perception can produce two entirely different results. Entirely different in one sense and yet on the other hand unfortunately very much alike. It is the combination of their extreme likeness and their utter difference that threatens to wreck the instrumental theory, and with it, the science of physics as ordinarily understood. When we perceive reality, if we ever do so, the effect of the whole process in the reality, the organ, the brain, and the mind is to establish a relation between the mind and the reality that we perceive. When we perceive appearance, the effect of much the same process in the organs and the brain is to produce, not a relation to something already existing, but a whole of object + relation to mind. Now two effects could hardly be more unlike than this. Yet on the other hand there is an immense likeness between them" (p. 240).

This leads up to the question: "Can you really believe that practically the same mechanism can produce such utterly different results?" Nevertheless Mr. Broad does not *entirely* accept the conclusion to which the argument points. He adheres to the view that in touch, at least, we become acquainted with primary qualities which resemble those of their causes—not, oddly enough, their immediate causes, but others far enough back to be also causes of the visual appearances of the "same" things. The scientific theory of the causation of our perceptions, he points out, "assumes that the remote causes of our perceptions resemble their objects not only in the general way that both have primary qualities, but also in the much more particular one that there is a general resemblance between the shape of the appearance and the shape of the remote cause" (p. 245). The queerness of such an assumption is fully recognised, but nevertheless, with limitations, it is allowed to be reasonable as regards tactual shapes (see p. 262). The final statement is as follows :—

"Our conclusion, then, is that it is most probable that there is a real counterpart corresponding point for point to what is perceived in most (perhaps in all) the tactual perceptions that we have of figure, though doubtless more differentiated than the tactual objects themselves; and that events in this reality are the causes of our visual perceptions, according to laws which science, stating its position in terms of perceptible primaries, is able to discover" (p. 265).

For my part, I cannot believe that a conclusion of this sort can represent the truth of the matter in its simplest form. The whole theory seems to me unduly ingenious and complicated in its developments, too much *ad hoc*, and too destitute of a large simple structure. It reminds me of the successive epicycles by which the Ptolemaic astronomy was emended before it gave way to Copernicus. Whatever the truth may be about perception and reality, I feel convinced that, as in Copernican astronomy, the difficulty of discovering it lies in a difficulty of imagination at the beginning, not in subtleties at late stages of the development. Mr. Broad's book produces upon me the impression of listening to a long cross-examination of a plausible witness by a highly-skilled barrister, Mr. Broad himself fulfilling both rôles. At first the witness's story seems quite straightforward. Gradually little points are elicited, none of them fatal, but each requiring a more or less unplausible addition to the original evidence. At the end, though the story has not been actually refuted, we are left with an uneasy feeling that it is wrong from beginning to end. My own firm conviction is that all the conceptions traditionally employed—reality, perception, cause, matter, space, time, mind—need such radical overhauling that theories stated in terms of them can hardly be judged at all until they have been translated into new language and vitally transformed by the translation. But so long as the traditional conceptions remain unchanged, I do not see what better discussion is possible than that to be found in Mr. Broad's book.

The last chapter, on "The laws of mechanics," is less important than its predecessors. The author is entirely justified in his criticisms of the present reviewer's arguments in favour of absolute motion, which is neither logically necessary nor logically impossible, but on grounds of economy should not be employed in stating the laws of mechanics. The subject of Newtonian dynamics is hackneyed, and it is difficult to say anything very new or very interesting within the framework of the traditional conceptions. We could wish that Mr. Broad had given a more important position to the principle of relativity, instead of relegating it to an appendix. Moreover, even concerning Newtonian dynamics, there are things to be said which we should have wished to find. Take, for example, the first law of motion. It may be a definition of equal times, or of all sorts of things. For my part, I should regard it as a definition (or a way of reaching a definition) of the "same" thing at different times. This cannot be obtained from continuity alone, as may be seen by considering a sensibly homogeneous fluid. But this topic is too large for the end of a review.

Mr. Broad's book preserves a uniform level of very high excellence. There is not one foolish word in it; everything is clear, definite, and well reasoned. But one could wish that he would apply his immense abilities to the invention of genuinely new theories, rather than to the fitting together of an extraordinarily ingenious mosaic of bits of old theories. His book is exceedingly useful as showing the best that can be done in that way; but I do not believe it is the most useful book he is capable of writing.

B. RUSSELL.

VII.—NEW BOOKS.

Groundwork of Logic. By J. WELTON. London: W. B. Clive, University Tutorial Press, 1917. Pp. xi, 356.

UNDER the existing conditions in the academic world any attempt to write an introduction to logic must be a compromise—or rather a series of compromises—between the tradition as it has been shaped by many centuries of academic teaching and the actual facts of human thinking as they are revealed by psychology and by the cognitive successes of the sciences, and the most that can be hoped for is that every successive compromise will leave the case for the tradition a little weaker and the prospect of rational reconstruction a little stronger. But for a long time to come whoever undertakes to compile a compendious treatise on logic will not only have to decide upon what he will introduce and what omit, but also upon the attitude he will adopt towards the profound differences of expert opinion which exist as to the nature, function, and purpose of his science. Is he barely to state them, to hush them up, or to advertise them? There are obvious objections to each course. As, however, the professors of logic are not in general disposed to carry their logic to the bitter end of its 'logical conclusion,' they will naturally seek to negotiate a compromise on this issue also, and all but the most uncompromising will not expect a textbook of logic to be intellectually satisfying. They will be content if, while enabling examinees to answer the old type of questions, it exhibits a certain freshness in the choice of examples and the general re-hash of the materials, and provokes to further reflexion by leaving recognisable the contradictions which pervade the subject.

Such success as is possible within these limits Prof. Welton's *Groundwork of Logic* may certainly claim to have achieved. He has ventured to rearrange the traditional order of his subject so as to put 'induction' in its natural place before 'proof,' and shines in his illustrations, which are good, modern, and often topical. As might have been expected, he does not disavow the insight into how we think which he was one of the first and most conspicuous to display in *The Logical Bases of Education.* His accounts of the relations of judgment to beliefs, questions, commands, desires and purposes, of the choice of 'facts' (pp. 96, 103, 136) and the revision of 'laws' (pp. 104-105), of observation, experiment and hypothesis, are clear and excellent. He recognises the great logical importance of the notion of *relevance*, though more often than not under its objectivist disguise as the 'pertinent' or 'material,' which is misleading because it conceals that the relevant is always a *selection* for a human purpose from the totality of qualities which 'belong' to a subject. He reduces inductive 'proof' explicitly to probability (p. 218), and points out that probable conclusions are not devoid of *value* because they lack *validity* (p. 228).

On the other hand, he does not go further into this distiuction, nor does he contemplate the possibility that *all* truths may have to be reduced to probabilities, when judged by the ideal of absolute demonstration. His account of 'validity' is nebulous, of 'form' obscure, and in dealing with cause and effect, axioms, system, certainty and syllogistic proof, he simply follows the tradition. It is perhaps a merit that he makes no attempt to co-ordinate his two sets of doctrines, seeing that such an attempt would assuredly lead to open failure; but the results are not likely to impress intelligent beginners with the coherence of logical science. It is not merely that Prof. Welton is silent about 'Sidgwick's Ambiguity,' in the light of which the old claim that "if one accepts as true the premisses of a valid syllogism, one is bound in consistency to accept the conclusion" (p. 250), becomes plainly untenable, and that the charge of *Petitio* is inadequately answered by taking the major premiss as a 'law' (in a way which appears to involve some confusion between laws of nature and of the State on p. 259), without noticing the retort that this interpretation also begs the question (or affirms a tautology) when it assumes that the 'case' to which the 'law' is applied is a case in point;[1] what seems indefensible, on Prof. Welton's own showing, is that he should claim that the conclusion of a 'valid' syllogism is, in his sense, *proved*. For he has (rightly) denied that "all the applications of scientific laws must be known before the law can be stated" (p. 259), and admitted that empirical laws are tested, modified, rejected or established by "further comparison with fact of conclusions reached deductively" (p. 105). As, moreover, 'axiomatic' laws are not axioms if the facts disagree with them (*ibid.*), and "so in every case a universal judgment must agree with the facts or be rejected" (p. 106), it would seem to follow that if the conclusion anticipated by a deductive 'proof' does not in fact occur, a doubt is cast either on the truth of its premisses, or on the selection of the 'case': or otherwise, that *after* we have been led to expect an event by a demonstrated conclusion, we have yet to wait and see whether it comes true in actual fact. Which no doubt is the case; but is it not quite inconsistent with what is traditionally taught about the cogency of demonstration?

Similar, and equally unfounded, superstitions linger on in other places. Thus Prof. Welton clings to that sheer piece of logical pedantry the 'reciprocal relation of cause and effect,' without seeing that whatever is analysed out as a 'cause' may be investigated further, and will then become susceptible of further distinctions, which will turn the original 'cause' into a plurality, so that there can never be any actual point at which the convertibility of cause and effect can be assumed absolutely. He repeats (p. 232) that "strict proof is reached only when it is shown that no other explanation of the facts is admissible," without inquiring what is to happen to 'strict proof' when it is shown that all that can ever be shown is that no other explanation has yet occurred to any one. He can allege no reason for the belief that it is necessary that "a system of thought should have a solid foundation" (p. 95), and "should make sure that what it starts from is true" and that "the safest starting-point for a new system is the exact knowledge of facts" (*ibid.*). These dicta, if they mean anything, mean that it is not possible to argue from hypotheses, and to verify them subsequently by experience of the facts they have anticipated. And this of course is ludicrously untrue. Hypothetical premisses can be argued from just as easily as the most absolute certainties. Why, then, should logicians persist in stipulating that the experimental endeavour we call reasoning should start from what are known to be 'facts'? In 99 cases out of 100 the belief that we are starting from 'fact' proves to be grotesquely false; in the 100th the initial fact is transformed out of all recognition; in all cases our reasoning would proceed exactly as well if our hypothetical data were recognised as such, while we ourselves should probably be far readier to revise them if we had realised their true nature from the start. Thus a more correct logical analysis would be more favourable to scientific progress. Lastly, it would then become possible to give a complete account of verification, and to emphasise, instead of slurring over, the fact that it can never be a 'valid' process, because it always proceeds by 'affirming the consequent,' but that the right inference from the conclusion that '*no verified truth is valid*' is that *no 'valid' proof is possible*. All these strictures, however, only mean that it passes the wit of man to turn logic into a plausible compromise, and in nowise dispute that Prof. Welton's book is a good work of its kind. It is, moreover, singularly free from misprints, though Prof. Poulton's name is misspelt on page 201.

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[1] *Cf.* my *Formal Logic*, p. 207.

F. C. S. SCHILLER.

Strength of Will. By E. BOYD BARRETT, S.J. Longmans, Green & Co. Pp. 263. 4s. 6d. net.

This book is written in a clear and entertaining manner, and will make good reading even for the amateur in psychology, if he is interested in the psychology of will and character. The author, already known for his researches in will psychology carried out at Louvain, planned courses of will training which consisted in the doing of some trivial act (*e.g.*, standing on a chair for ten minutes a day) for no other reason than that of demonstrating or exercising the power of the will. The points which emerge most clearly in the course of the experiments are that the experimenter feels a more complete control of himself, and, particularly, that there is a pleasure in experiencing this assertion of the will, in the idea of willing for the sake of willing.

Unfortunately, however, there is no proof given that these exercises did or can develop the power of willing in general. Not that we need question the possibility of a general development of will-power, if by any particular exercise a person is led to see what good can be attained by firmness and continuity in willing, or to have a greater self-respect through what he has accomplished by making an "effort of will".

Mr. Barrett's experiments, however, naturally cannot prove that this effect follows except in reference to his own case, and it seems to me likely that in many cases such exercises would fail, and that because of their very formality and unreality. Yet this formality is a point on which Mr. Barrett especially insists. It is essential, he says, that "there should be no ulterior interested object in the task, for if so, the primary object of will training will be lost sight of" (p. 138). But surely a similar exercise of the will may be got from doing (or avoiding)—partly for the sake of a new interest in cultivating the will—actions which we have longed to do (or avoid) but have been too weak to accomplish without this new added motive of developing or proving our will-power. Such a way would seem superior to Mr. Barrett's artificial methods in that we should realise more fully that such increased will-power was accomplishing useful purposes; and also in that, at the same time, a specific desirable habit is being set up or an undesirable one broken down. At the same time some general improvement of will is no doubt better secured when the idea of asserting or cultivating one's will is an additional motive of the action.

We can see the reasonableness of Mr. Barrett's urging that the exercises must not be too difficult at first and that they should progressively increase in difficulty; but it ought surely to be possible to fulfil this condition even with exercises of a really useful nature.

The main point in a general training of the will seems to be to secure reflection upon the desirability of self-control, or upon the possibility of effective volition, and this may be provided for without any such formal exercises. In so far as such exercises are useful it would seem to be (even judging from Mr. Barrett's introspection) in repeatedly bringing before the mind the idea and ideal of the power of the will.

Thus while from the point of view of experimental psychology we may welcome Mr. Barrett's ingenuity in devising novel experiments, and the thoroughness of his introspective methods, as an educationist I should deplore his tendency towards extreme formalism. If "the element of practical advantage in a task would ruin it from the point of view of will development" then most people, including some men of the finest character and "strongest wills" ever known, have never had any will training! Further, the experiments themselves do not prove that there is any permanent effect upon the will-power of the experimenter—they can only indicate an increasing feeling of power at the time. Can we be sure there will be a permanent increase of power in doing things other than further psychological experiments of a similar type? Mr. Barrett admits that even after "retreats"—"spiritual exercises lasting four to eight days during which the will is worked up to a high state of perfection"—there may follow in some cases no strengthening of the will in everyday life. The present writer once tried the famous recommendation of William James for developing will-power, namely, to do something every day for no other reason than that one would rather not do it, a method which Mr. Barrett's experiments resemble in some respects. A most disagreeable task was chosen on a country holiday, namely, the picking up of slugs, the very sight of which was loathsome. As a result, I could trace only a lessening of the specific horror of touching slugs, but no signs of a general improvement of will-power.

To sum up, Mr. Barrett rests content with an insufficient analysis of will-power; he is content to use too general terms and to give too small a place to specific impulses and motives. I may add that the book will be of special value to those who are interested in formal religious exercises of the type already referred to, while the author's skill in devising experiments and especially in making introspective records of them, makes his work a useful contribution to experimental psychology.

C. W. Valentine.

The Principles of the Moral Empire. By Kojiro Sugimori, Professor of Philosophy in the University of Waseda, Tokyo. London: University of London Press, 1917. Pp. 247.

Japan at the present moment occupies a unique and intensely interesting position in relation to European civilisation. She is in it, but not of it. Forced into close contact with it by the imperious demands of an imperialistic trade expansion, which has usually been a precursor of political conquest, she alone of Asiatic communities has survived the shock of the encounter without suffering disintegration. Thanks apparently to her happening to possess in the Samurai a hereditary nobility intelligent and resolute enough to lead her into new paths, she has been able not merely to copy, but really to adapt, and to assimilate the new into her social tissue without destroying the old. When the guns of Commodore Perry's fleet put this issue in its most brutal and urgent form, Japan soon perceived that she must abandon the secular seclusion perfected for her by Iyeyasu, and once more have a foreign policy. So she entered into the 'comity' of European nations, and has more than held her own in that den of thieves. But she has remained as alien in spirit, in her language, script, religion and institutions (she still has a monarch who rules, not merely by divine right, but by divine descent), as she is in race. Until now she has played a difficult game with astonishing skill, and she seems about to reap her due reward. She is now watching the European race committing *hara kiri* on a cosmic scale, with all the admiration she was trained to bestow upon such displays, but withal waiting in a coolly calculating spirit for her opportunity to assume the leadership of Asia.

When a people has such prospects and ambitions it becomes important to ascertain with what mental equipment it is being furnished by its thinkers, especially as the exponents of Japanese thought for English readers are neither very numerous nor very trustworthy. Prof. Sugimori's book therefore may be welcomed as an authentic and valuable document for the interpretation of the present mind of Japan. So taken it reveals an abundance of European stimulus indeed, but by no means merely mechanical copying. An Oriental twist is given even to the hoariest of our philosophic platitudes, and Prof. Sugimori's views are continually eluding our conventional categories. His style does not always make his argument easy to follow, though it not infrequently shows the quaint raciness we have come to associate with Japanese English. But the aphoristic way in which his opinions are enunciated sometimes gives him a dogmatic air, and he should really learn to break up his argument into paragraphs, and not allow a monster to sprawl over twenty-one pages, like that on pp. 195-216. In his views, Prof. Sugimori is emphatically humane and progressive. He is essentially a personalist, who recognises no God but "the Supreme Value" (p. 241), and regards all social institutions as subsidiary to the development of personal morality. He is a free trader (p. 224 f.), but no democrat (p. 208)—unless democracy be interpreted as respect for personal value (p. 124), and wishes to restrict the State to the more mechanical social functions. He is sufficiently free from the bigotry of patriotism to deplore "the international anarchy" (pp. 138, 200), and to assure us that "even a pet dog is sometimes dearer to us than some of our compatriots" (p. 229). Altogether one feels that if views like Prof. Sugimori's guide the actions of Japan, the rest of the world need not greatly fear the probable extension of her power.

F. C. S. Schiller.

On the Threshold of the Unseen, An Examination of the Phenomena of Spiritualism and of the Evidence for Survival after Death. By Sir William F. Barrett, F.R.S. Second edition, revised. London: Kegan Paul, Trench, Trubner & Co., Ltd.; New York: E. P. Dutton & Co., 1917. Pp. xx, 336.

This book, of which the title sufficiently explains the subject, was largely written, Sir William Barrett tells us, in 1891, but it was published only in 1908, when the first edition was rapidly sold out. It has now been enlarged and brought up to date, so much so that experiments made in December, 1915, and in 1916 are described, and Dr. Crawford's book on *The Reality of Psychic Phenomena* (1916) and the 'Doris Fischer' Case of dissociated personality (1915-1917) are mentioned. It may thus stand as representative of the matured convictions of a distinguished man of science, who is also almost the last veteran of the generation of inquirers who founded the Society for Psychical Research. It gives as a whole an authoritative and readable account of the problems of psychical research, though its order of treatment is a little paradoxical. For whereas most writers have endeavoured to lead up to the more anomalous phenomena from those which impose less strain on ordinary powers of belief, Sir William starts (in 'Part II.') with 'the physical phenomena of spiritualism,' and only discusses the mildest form of the supernormal called 'telepathy' at the end, in 'Part VI.' If we agree here to concentrate criticism on the philosophic, as opposed to the scientific and religious, issues involved, we may note that the appendix on miracles is hardly adequate. But for this the theologians are no doubt largely to blame, seeing that they have not been able to make up their minds about what they want to mean by a 'miracle'. It seems an overstatement to declare (p. 292) that "hypnotism and telepathy are almost as fully established as many of the accepted truths of science". For of 'telepathy,' at any rate, there is as yet no experimental control, and consequently the pragmatic test, which is the real basis of men's belief in scientific truth, can hardly be used. Like all discussion of open, and hotly contested, questions of a science in its 'nascent' form, the book ought to be of interest and value to logicians who endeavour to apprehend the real movement of thought.

F. C. S. Schiller.

A Standard Method of Testing Juvenile Mentality. By Norman J. Melville. Lippencott Company, Philadelphia and London. Pp. 140.

A practical manual for use in connexion with the Binet Tests. Part I. includes a discussion of general procedure in collecting and interpreting data based upon practical experience with the tests, while Part II. gives a convenient arrangement of the tests with suggestions as to a uniform method of applying them. These suggestions should be useful especially for the inexperienced experimenter, though absolute uniformity in using such tests as Binet's is, of course, impossible.

C. W. V.

Grundlegung der Allgemeinen Kunstwissenschaft. Von Dr. Emil Utitz. Band I, Stuttgart, 1914. Pp. 304.

The author of this book warns off all those who want "fancy" writing and "geistschillernde Betrachtungen über Kunst". Quite truly he remarks, "nicht um Mysterien und Wunder handelt es sich mir, sondern um ernste und exakte wissenschaftliche Erkenntnis". In the first volume he deals with such topics as the problem of a general *Kunstwissenschaft*, the æsthetic experience (including a discussion of the notion of value and æsthetic value), the enjoyment of nature and the enjoyment of art, and the work and pleasure of artistic creation. The work is more particularly useful for its treatment of the problems which lie between pure æsthetics and the history and criticism of individual arts. The book, which is admirably printed, includes a dozen well selected full page illustrations.

C. W. V.

Received also :—

Studies in the History of Ideas, edited by the Department of Philosophy of Columbia University, Vol. I., New York, Columbia University Press, 1918, pp. 272.

Mrs. Northesk Wilson, *The Talk of the Hour, or The Explanation of the Human Rays*, London, Jarrold & Sons, pp. xv, 96.

Henry Bradford Smith, *A Primer of Logic*, Rulaski, Va., 1917, pp. 48.

Bernard Hart, M.D., *The Modern Treatment of Mental and Nervous Disorders*, Longmans, Green & Co., 1918, pp. 28.

Thomas Whittaker, *The Neo-Platonists:* a Study in the History of Hellenism, 2nd edition, Cambridge University Press, 1918, pp. xv, 318.

John I. Tookey, S.J., *An Elementary Handbook of Logic*, New York, Schwatz, Kirwin & Fauss, 1918, pp. xiv, 241.

R. W. Wenley, *The Life and Work of George Sylvester Morris*, New York, The Macmillan Co., 1917, pp. xv, 332.

Neurological Clinics: Exercises in the Diagnosis of Diseases of the Nervous System, edited by Joseph Collins, M.D., New York, Paul B. Hoeber, 1918, pp. 271.

VIII.—PHILOSOPHICAL PERIODICALS.

JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS. xiv., 16. **T. L. Davis.** 'On Inductive Inference.' ["The only meaning which can be attached intelligently to the word *probable* is this—that the probable is that which would be true if we knew that our will to choose fairly among all possible samples was successful. The principle of induction derives its validity from the metaphysical assumption that there exists a collection of potential experiences each member of which is what it is absolutely."] **M. W. Calkins.** 'A Clue to Holt's Treatment of the Freudian Wish.' [He takes the self as the primary unit of his psychology, though he does not realise it.] xiv., 17. **F. C. S. Schiller.** 'Mr Bradley, Bain and Pragmatism.' [Criticises the claim that Bain anticipated pragmatic logic and was confuted by Bradley. It is shown that Bradley's version of 'Bain' is a "Circean transformation" of the actual Bain's theory of belief in *The Emotions and the Will*, and is neither authentic, nor consistent nonsense, that his criticisms are unsound and tainted with the formalist abstraction from meaning, and that not one of the essential features of pragmatic logic occurs in Bain, who was concerned not with the theory of judgment, but with the distinction between real and spurious beliefs, for which however he suggested a valuable test in the willingness to act on a belief.] **C. E. Ferrer** and **G. Rand.** 'A Note on the Needs and Uses of Energy Measurements for Work in Psychological Optics.' [On the difficulties of subjective measurement.] **E. C. Parsons.** 'The Teleological Delusion.' ["God's purpose, nature's purpose, Society's purpose—that is the course of teleology, of that science which appears to be most indispensable to human composure, perhaps to human happiness." "The supreme horror of the war lay in its assault on our sense of progress," but "I am unable to see how peace can be born of militarism or to differentiate between militarism and militarism".] xiv., 18. **A. H. Lloyd.** 'Pragmatism and Metaphysics.' ["Pragmatism, while possibly not satisfying any known metaphysician, is nevertheless really big with the metaphysical." . . . "it so nearly identifies experience with reality as to render a metaphysic gratuitous" . . . "involving as it does the union of ideality and practicality, or spirituality and real life, of values and instruments, it would change the present" and enter on "the creative life of reality".] **C. Pepper.** 'The Nature of Scientific Matter.' ["The matter of science is what science describes, the objects about which laws are made." These 'facts' must be rendered comparable with each other—by reduction to visual data.] **J. Dewey.** 'Duality and Dualism.' [Disclaims both epistemological monism and epistemological dualism, which is "only two monisms loosely stuck together," and doubles all difficulties. If it is to be labelled D.'s position is "empirical pluralism".] xiv., 19. **W. T. Bush.** 'Constructive Intelligence.' [An appreciative review of *Creative Intelligence* by Dewey and others.] **M. T. McClure.** 'Francis Bacon and the Modern Spirit.' [Finds in Bacon four criteria of modernity,

(NOTE.—Nos. xiv. 20-24 appeared in the July MIND.)

the cognate ideas of progress, control, utility, and responsibility.] xiv., 25. **R. W. Sellars.** 'The Status of Epistemology.' ['Critical realism' considers it as "the reflective science which studies the nature, conditions, and development of human knowledge in the light of the available facts. It begins with a reflective study of the individual's field of experience, his distinctions and views of knowledge, and passes gradually to an hypothesis which will best harmonise the known facts."] **F. J. E. Woodbridge.** 'Structure.' [(1) It is universal, (2) really a discovery, of an absolute kind, and (3) identifiable with metaphysical 'matter'.] **C. W. Cobb.** 'The First Antinomy of Kant.' [The proof of the thesis is charged with contradicting in its course its original assumption. For it is untrue that an infinite series cannot be completed, unless it has a beginning, which was denied.] xiv., 26. **W. M. Urban.** 'The Pragmatic Theory of Value: A Reply to Herbert W. Schneider.' [In xiv., 6; disputes the value of the pragmatic theory, accusing it of 'fundamental incoherence' on "the fundamental issue of 'value and existence,'" and declares that the specific situation must be abstracted from and that it is "both a duty and a right" to be "resolutely irrelevant" to the passing moment.] **H. W. Schneider.** 'The Values of Pragmatic Theory.' [Is a 'Rejoinder,' which enumerates as contributions to the theory of values made by pragmatism (1) a genuine *re*-consideration of the problem, (2) the conception that values are specific and cannot be studied *in abstracto*, (3) the analysis of the value situation, and (4) the critique of the metaphysical and theological separation of a world of fact and a world of value, of judgments of fact and judgments of value. As for philosophers who are 'resolutely irrelevant' to present interests, they are "a social nuisance and an irritant".]

"SCIENTIA" (RIVISTA DI SCIENZA). Series ii. Vol. xxiii. January, 1918. **G. Milhaud.** 'L'Œuvre de Descartes pendant l'hiver 1619-1620. 1$^{\text{ère}}$ Partie : La méthode et la mathesis.' [A most excellent attempt, guided by the *Discours* and by some probabilities, to describe the work which Descartes did in his famous 'stove'. Milhaud has shown, in the *Revue de Métaphysique* for 1916, that on the noted November 10, 1619, Descartes thought that he was in communication with God, and probably believed that He encouraged him in his intention of ceasing to learn from books and trying to raise by himself the building of human knowledge. For this purpose he chose a method to guide the mind in quest of truth in general, and the *Regulae* give, the details of this method. The *Regulae* date. from about 1628 (*cf.* Adam, *Œuvres de Descartes*, x., p. 486), and the *Discours* of 1637 expresses the essential part in some well-known rules. The first rule is opposed to the principle of authority, but also the aid of deductive logic is energetically refused : the *Regulae* insists on the primitive and almost exclusive part played by intuition in the acquirement of knowledge, and the aversion of Descartes for 'the pretensions of the dialecticians to dominate reason, to control the legitimacy of deductions, and to substitute themselves for natural light, for spontaneous intuitions' is even more strongly marked in the *Regulae* than in the *Discours*. At this point it is important to read the essay of Milhaud in the *Revue générale des Sciences* of 1916 on the first scientific discoveries made by Descartes in the March of 1619, since it shows that Descartes was then influenced above all things by his mathematical discoveries. The second rule is completed in the *Regulae :* Descartes requires that 'the decomposition of the difficulties to be resolved, or the objects to be known, should be pushed up to the simplest elements. . . . Such elements are seized directly and completely by the intuition.' The third rule shows the necessity of the order to be followed in reconstruction from these elements of more and more complex things. The *Regulae* are a very instructive commentary on the importance which Descartes attached to his 'enumeration or induction'. Descartes had in view researches of *all* possible kinds, and had no doubt that the processes which succeed so well in mathematics can lead men to universal knowledge. To read certain passages of the *Discours*, the chief utility of mathematics would seem to be to exercise the mind in good method, and 'mathematics would thus seem to be merely a kind of formal teaching for one who seeks the true method.' And this impression is so current that, when Descartes appeals to the "Analysis" of geometers, it is usually supposed that he has in view the manner of research and of demonstration consisting in first supposing the unknown to be known, and then proceeding to demonstrated or evident truths. Thus, Hamelin (*Système de Descartes*, p. 55) thinks that "Analysis" means with Descartes not a part of mathematics but the analytic method. . . . But for Descartes as for us it is certainly a part of mathematics itself which is meant, and not merely the logical processes which are used there.' As for the reason why Descartes chose analysis rather than, say, Euclidean geometry, the commentary on the fourth rule in the *Regulae* shows very clearly what Descartes requires of the ancient geometers like Pappus and the algebraists who follow the tradition of Diophantus (Adam and Tannery, x., p. 373). The ancients used quite naturally, and without making it known to us, an analysis in which Descartes sees what he calls 'mathesis' (*ibid.*, p. 376): that is, the science whose object is pure quantitative relations, and on which depend all those—arithmetic, geometry. astronomy, music, optics, mechanics, and many others—which study the quantities specially realised by means of numbers or concrete magnitudes. That is what, in the eyes of Descartes, is the merit of the analysis of the ancients and of algebra. They do not merely give an example of long chains of simple and easy reasons, but contain the beginning of the true method, the science of quantitative relations, abstraction being made of the various things in which they may be seen at work. For Descartes, it would simply be to follow the rules of his method to try to construct this science (mathesis, universal mathematics) by relying on the analysis of the ancients and the algebra of the moderns,—but freeing the first from the figures which encumber it and the second from complications of notation. In fact, 'this would be to go straight to the simplest things. But it would be also and above all else to give the edifice of universal science its firmest basis.' Some times it is difficult to see whether the method or the mathesis is meant in the long commentary on the fourth rule in the *Regulae*; we may almost say that the mathesis *is* the method. In any case the consideration of this universal mathematics is the first care of Descartes: 'perhaps this universal mathematics is less an application of the famous rules than the working of the method itself, manifesting itself both in its form and its matter, to constitute the first and fundamental basis of Cartesian science'. In the *Discours*, when Descartes spoke of 'lines' for representing relations and proportions in general, we might at first be misled into thinking that here was indicated the fundamental idea of analytic geometry. But in the Latin translation Descartes added the word *rectis* at the end of the word *lineis*, and thus showed clearly that he simply meant that length was chosen by him to represent, not merely a sum or a difference but also a product, a quotient, a square root, and so on (*cf.* the sixteenth rule in the *Regulae*).] **A. S. Eddington.** 'The Interior of a Star.' **A. Mieli.** 'Il periodo atomico moderno. Parte III^{a}: La risoluzione del problema.' **W. A. Phillips.** 'La question irlandaise.' **E. Benès.** 'La place des

Tchécoslovaques parmi les Slaves.' Book Reviews. Review of Reviews. French translations of Articles in English and Italian.—Series ii. Vol. xxiii. February, 1918. **G. Milhaud.** 'L'œuvre de Descartes pendant l'hiver 1619-1620. II^{ème} Partie : Les premiers travaux d'Analyse et de Géométrie.' **A. C. D. Crommelin.** 'The Galactic Circle as a Plane of Reference for Star Places.' **U. Pierantoni.** 'I microrganismi fisiologici e la luminescenza degli animali.' **C. Vallaux** and **J. Brunhes.** 'Les éléments géographiques de la guerre.' **A. Struycken.** 'Nationalisme et internationalisme.' Book Reviews. Review of Reviews. French translations of articles in Italian and English. Vol. xxiii., March, 1918. **George Sarton.** 'Le nouvel Humanisme.' [The War has brought out clearly, even to people who could not see the fact before, that science must be given a larger place in education. The great defect in those who try to teach science lies in their neglect of literary studies, and thus we must *humanise* science. At the present time there is no such thing as 'scientific education'; for it is not humanised by a study of universal history. Programme for future education. An important article from one who has shown himself capable of much self-sacrifice in support of his ideas in Belgium before and after August, 1914.] **G. Castelnuovo.** 'Il calcolo delle probabilità e le scienze di osservazione.' **Frederick Soddy.** 'The Compounds and Mixtures into which the Chemical Elements have been resolved.' **F. Savorgnan.** 'Le problème de la population après la guerre.' **A. Meillet.** 'La situation linguistique en Russie et en Autriche-Hongrie.' Book Reviews. Review of Reviews. Chronicle. French translations of articles in Italian and English.

IX.—NOTE.

I see, on looking through my paper in MIND, N.S., No. 107, that, although I at first speak of 'Whitehead and Russell,' I later generally refer to pieces of notation contained in *Principia Mathematica* as 'Russell's'. I did not mean by this to ascribe them to Mr. Russell rather than to Dr. Whitehead. I have no idea which of the authors is responsible for any given part of the book, and I only used 'Russell' as an abbreviation for 'Russell and Whitehead'. I should be sorry indeed to appear unfair to Dr. Whitehead, and my only excuse is the extreme difficulty of putting a phrase like 'Russell and Whitehead' into the possessive in English. Perhaps Dr. Whitehead will provide me with a suitable notation for this purpose, and Mr. Russell will guarantee it to be 'ethically neutral'.

C. D. BROAD.

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